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Determinants of Continuity of Care for Persons Transitioning from State Psychiatric Facilities to Communities

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Determinants of Continuity of Care for Persons Transitioning from State Psychiatric Facilities to Communities

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

By

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Abstract

DETERMINANTS OF CONTINUITY OF CARE FOR PERSONS TRANSITIONING FROM STATE PSYCHIATRIC FACILITIES TO COMMUNITIES

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

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When individuals with serious mental illness are discharged to the community, continuous and coordinated care are both desirable and necessary. A lack of continuity places the individual at risk for becoming lost to further services.

This study explores continuity of care for persons discharged from state psychiatric facilities in Virginia to communities. Continuity of care is defined as the successful initiation and maintenance of face-to-face contact by CSB staff with individuals to be discharged from state hospitals, and the subsequent provision of services post-discharge. This study identifies factors that influence continuity of care, examines the degree to which these factors play a role and the relationships between continuity of care and client characteristics.

Predictor variables include characteristics of the population-at-risk: predisposing factors (i.e., age, gender, race), enabling factors (i.e., living situation, catchment area change, and geographic location of the CSB) and need factors (i.e., length of stay, legal status, and primary diagnoses).

Data sources include two large data bases, 1) survey of CSB staff on the outcome of individuals discharged to their area in FY 1992, and 2) demographic information from state mental health authority.

Findings from the survey show that 83% of persons discharged had a record of the discharge at the CSB. In-hospital contact by CSB staff prior to discharge was lower (54%).

Results show that individuals are more likely to receive continuity of care if they are discharged to a CSB in a rural area, have a diagnosis of schizophrenia, and do not have a primary diagnosis of substance abuse.

The theoretical framework, based on the Community Support System principles and the notion of vulnerability, leads to important policy and practice implications. For example, the study suggests that new and different programs might be more effective for individuals with substance abuse diagnoses, especially in urban areas.

Recommendations include a mandate for nursing provision

of services, or oversight of services to assure continuity of care between service settings.

Future research could improve upon the measurement of the variables, and examine consumer and provider perceptions of continuity of care as an outcome.

Chapter 1. Introduction

Overview

The focus of this study is to identify the determinants of continuity of care for persons who are discharged from state psychiatric facilities to the community mental health care system in Virginia. The definition of the concept of continuity of care, how it might be measured, and what methods should be used to evaluate it are ill-defined at present. The goal of this research is to present a framework for study of continuity of care for the mentally ill, and to suggest empirical definitions in developing a theory of continuity of care. This chapter specifies the research problem, the significance and purpose of the research and outlines the remaining chapters of the dissertation.

The chronic, recurrent nature of the most serious and persistent mental illnesses establishes the necessity of acute stabilization of symptoms for many individuals diagnosed with mental disorders (Solomon, Davis,& Gordon, 1984; Strauss, Hafez, Lieberman, & Harding, 1985). To this end, hospitalization may occur several times over the course

of the treatment of the disorder and often includes one or more stays in a state-funded psychiatric facility (Shepherd, Watt, Falloon, & Smeeton, 1989). When patients are discharged to the community, continuous and coordinated care are both desirable and necessary for quality service delivery and successful patient outcomes (Mechanic, 1986; Rosenfield, Caton, Gideon, & Robbins, 1986).

Statement of the Problem

In Virginia, over 6,000 discharges from state hospitals to the communities occur on a yearly basis (Annual Statistical Report, 1992). The transition of care from the facility to the community presents particular challenges for providing continuous and quality services to this population. Greater knowledge about the transition of patients from state hospitals to the community will provide important information for the improvement of services to this population.

Hospital and community linkages form the basis for explicating continuity of care issues in the public mental health system. In the Community Support System (CSS) framework, the community is seen as the preferred locus for treatment, even though the hospital is considered part of the community. Thus, the hospital is a part of the community system and being hospitalized should not mean leaving the community.

Continuity of care is theoretically defined in this study as an outcome measure: the successful transition between hospital and community-based care in such a way that the care plan is communicated between service providers and will enhance continuous provision of services.

Greater knowledge of continuity of care for persons with serious mental illness is relevant not only for understanding the many dimensions of hospital-community linkages, but also to understand the specific mechanisms that affect types of programs offered in the community.

Furthermore, many community programs instituted specific procedures for tracking or following discharged psychiatric patients who leave state hospitals and go into community residences. Cooperation between the facilities is vital for this tracking to occur. An outcome for a community system is continuity of care for persons who go between hospital and community in the public mental health sector. In Virginia, community mental health care is provided by the Community Services Boards (CSBs).

Purpose

The purpose of this study is to determine the factors that affect the continuity of care for persons discharged from state psychiatric hospitals in Virginia, with a specific focus on a comparison between rural and non-rural (i.e., urban and suburban) areas. The three specific aims

of the proposed study are: a) to identify the extent CSBs are successful in initiating and maintaining linkages with clients who are discharged from a state hospital, b) to determine differences between rural and non-rural areas in the extent to which continuity of care is provided to discharged mentally ill patients, and c) to determine to what extent client and community characteristics predict successful continuity of care.

The History of Deinstitutionalization

The organization and delivery of public mental health care services have undergone tremendous change over the past two decades. The major changes concern the reaction and response to the public policy known as deinstitutionalization. In Virginia, deinstitutionalization first became legislative policy in 1968, when the Virginia General Assembly passed Chapter 10 of Title 37.1, Code of Virginia. Chapter 10 enabled local jurisdictions to establish community mental health and mental retardation services boards.

Nationwide interest in deinstitutionalization continued in the next decade. In Virginia, the Hirst Commission focused on shifting the locus of treatment from large inpatient facilities to the communities. During Governor Holton's administration, Commissioner Allerton established the goal to reduce state facility beds by 10% each year over

a five-year period. The average institutional census declined by 5,000 beds, or 35%, between 1971 and 1976 (Kelly, 1994).

This policy started to come under vigorous attack almost immediately in Virginia and across the United States (Lamb, 1988). Skepticism about both the rationale and implementation of deinstitutionalization has continued throughout the 1980s and into the 1990s (Bachrach & Lamb, 1989). Viewed as a policy gone awry, deinstitutionalization continues to be debated.

One of the federal initiatives to address the problems caused by deinstitutionalization was the development of the Community Support System (CSS) philosophy (Turner and Tenhoor, 1977). The National Institute of Mental Health (NIMH, 1982) developed a model to guide states as they began to deal with the transfer of patients from institutions to the community. In the original model, the client is viewed as central to case management (Figure 1). The consumer is the hub of a wheel where other services provided in the community are the spokes of care that are available for treatment. The model was developed to illustrate the principles and theory behind the community mental health movement as a response to deinstitutionalization.

The CSS concept delineates an array of essential components including client identification and outreach.

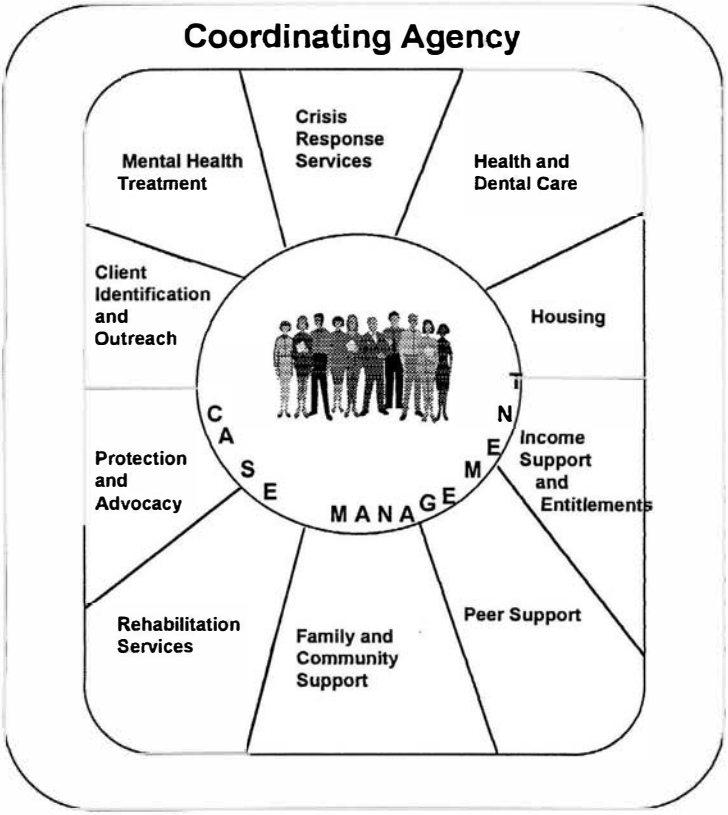

Figure 1. Community Support System Graphic

Although state mental health authorities were guided by the federal CSS philosophy, they were not required to implement the full array of services as set forth in the philosophy statements. Many states were not able to build the community centers and start the services envisioned in the plan. Funding sources were not identified. Many states, like Virginia, continued to operate state budgets with existing funding formulas and continued to channel the major portion of the state budget to the facilities rather than the communities. In essence, the dollars were not following the patient out of the hospital (Provan & Milward, 1994).

More than twenty years after the implementation of deinstitutionalization, the transfer of care between large state-run facilities to local, semi-autonomous communities continues to be a period of risk, a time when patients can become lost to the system of care. This period became more tenuous as the federal commitment decreased, beginning as early as the passage of the Omnibus Budget Reconciliation Act (OBRA of 1981; Foley & Sharfstein, 1982). Recognizing the high-risk nature of becoming lost to services for the group of individuals with serious mental illness, Congress enacted the State Comprehensive Mental Health Services Plan Act of 1986 (P.L. 99-660), which mandated increased state planning for the vulnerable, at-risk psychiatric groups.

Virginia Policy on Continuity of Care

In Virginia, the CSBs have designated responsibility for the post-hospital services through state regulation. The procedures through which Virginia's public mental health and substance abuse system seeks to assure continuity of care are documented in the Client Services Management Guidelines (Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services, VDMHMRSAS, 1988). The guidelines describe the manner in which the CSBs and state psychiatric facilities are to accomplish their respective client service management responsibilities in order to ensure continuity of services. For example, the discharged client's discharge plan "must include an appointment with a CSB program representative scheduled within a week of the discharge" (p.18).

The results of deinstitutionalization have had implications for a variety of constituencies: mental health consumers, family members of consumers, mental health professionals, community mental health agencies, state and private facilities and finally, the citizens and taxpayers. Major concerns of these stakeholders now center on the outcomes of community care and the process and the structure of mental health care delivery rather than the locus of mental health treatment.

Health care reform in the states will mean changes in

the public mental health system, irrespective of national health care reform (Lamb, Goldfinger, Greenfeld, Minkoff, Nemiah, Schwab, Talbott, Tasman, Bachrach, 1993). There is an increasing emphasis on evaluating outcomes. Consequently, the CSBs are faced with the tasks of both competing for public dollars and critically evaluating community services offered. Many outcome questions remain unanswered: Which patients make the best transition? Which groups are more vulnerable? Which communities have better success at ensuring services for persons with chronic mental illness?

In summary, over the last two decades, a growing body of research has documented ongoing fragmentation in the public mental health system despite its efforts to achieve continuity of care (Granet and Talbott, 1978; Test & Stein, 1978; Bachrach, 1981; Tessler & Manderscheid, 1982; and Lamb, 1989). This fragmentation has prompted various federal, state and local responses in order to assure continuity of care. One example of such responses is the development of a community support system, a federal initiative of guiding principles to states which addressed fragmentation of services to the seriously mentally ill.

Why Continuity of Care?

Continuity of care is a concept that appears as both a process and outcome in community mental health literature

(Bachrach, 1981; Bass & Windle, 1972; Tessler, Willis & Gubman, 1986). While the concept has been identified as a priority research issue by the National Advisory Mental Health Council and the National Institute of Mental Health (NIMH) in the national research strategy (NIMH, 1991), the factors that might define it remain varied and ambiguous. In addition, recognition that persons with serious mental illness are part of a varied and diverse group only adds to confusion when mental health agencies try to create services that "fit the person" rather than asking the person to try to fit the offered programs. The extent to which continuity of care can be achieved is related not only to the individual, but also to the fit between the individual, the agency, and the community. Therefore, continuity of care represents facets of individual preferences, local resources and system philosophy.

Significance for Nursing

The concept 'continuity of care' describes the nursing practice goals related to working with seriously mentally ill individuals within a fragmented mental health care system. The goals of nursing care might be described as helping to bring all of the services together for the patients in a holistic and comprehensive manner. Krauss (1989) describes the watchwords of deinstitutionalization as comprehensive, continuity and care. "The primary mission of

nursing is to care for and about people, and to do so in ways that provide comprehensiveness and continuity" (Krauss, 1989, p.286).

In clinical practice, patient outcomes must be understood in the context of both the process of care and the structure of the care delivery system. Administratively, the nursing role in community mental health is one that is underdeveloped from a systems perspective. A recent qualitative study (Farrell, 1991) explored community psychiatric nurses' perceptions of their role with persons who have serious mental illness. The concepts of hospital-community linkages, communication and continuity of care emerged from the study and were considered to be significant attributes of a community system of care. Continuity of care was described as an outcome.

Continuity of care is of interest to psychiatric nursing for several reasons. First, community psychiatric nurses hold critical positions in community mental health agencies and have responsibility for implementing and assuring the success of total plans of care. Second, in their recognition of holistic care concepts, community psychiatric nurses are in positions to influence the client's recovery in the community. Finally, nurses are working in both hospitals and communities. The transition of care between settings could be greatly enhanced with

improved communication between these two settings.

Nurses make up a large majority of professionals who work with persons with chronic or serious mental illness (Fox, J.C. & Chamberlain, J., 1988). Primarily in staff positions of state hospitals, but also in a variety of advanced practice settings in the community, nurses play important roles in determining the ideology for community care. Mayberry (1991) and others have labeled the 1990s as the "decade of the brain," with corresponding implications for increasing the significance of psychiatric nurses. At the same time that nurses are expanding roles and functions in the community, there is renewed national emphasis on biological research and treatment. The importance of the biological theories supports the use of the nurse in the community, since nurses offer a biopsychosocial perspective that is somewhat different from that of the psychologist, social worker, or therapist.

While adherence to medication regimens has always been one function within the domain of nursing, changes in Medicaid reimbursement regulations now increase the emphasis of documenting necessity and compliance in this area. Furthermore, community programs are required to show nursing documentation of patient care, patient teaching and medication monitoring. The community mental health agencies rely on nurses to monitor and deliver psychotropic

medications and create systems for the most efficient ways to meet this goal.

Traditional psychoanalytic and psychosocial models used in the past attended to psychoanalytic or psychosocial rehabilitation approaches almost exclusively, with disregard for psychobiology. Medicaid waivers change the incentives whereby the traditional models may not be best and have thus become a new source of funding to the states and local programs. These emerging funding sources focus strongly on the ability of nurses to document planning of holistic treatment in nursing care plans.

The concept of continuity of care and the study of transitions are important to nursing. In fact, Meleis (1991) has proposed that the concept of transition be added to the four primary elements of the nursing metaparadigm: individual, nursing, health, and environment. Nurses are in a position to provide care for both acute and chronic phases of an illness. Chronic or serious mental illness implies a long-term course of illness that must consider both treatment and rehabilitation components.

The World Health Organization (WHO, 1980) developed a classification for the sequence for long-term illness which supports the idea that treatment of the disease alone is not enough. This classification system includes an understanding of the consequences of the illness and the

responses of the individual and society to service delivery. It is through the knowledge of the persistent and protracted nature of the illness that continuity of care becomes most pertinent to study. Furthermore, the issues of continuity of care are even more relevant in mental health due to the vast numbers served, the legal implications of psychiatric hospitalization, the cognitive impairments and the nature of social disabilities affecting the population.

The Roles of Ideology and Clinical Practice

Although the post-deinstitutionalization era involves a public policy that has been guided by a philosophy or ideology, the need for reevaluation of the issues is timely. In fact, the ideology has been criticized for going too far. As stated by Lamb (1991): "Ideology should not determine clinical practice, but rather clinical experience should determine ideology" (p.117). An even more balanced approach would view the interactions between ideology and clinical practice as reciprocal, each in turn influencing the other to form a meaningful whole. Thus, while new ideology influences policy, the revision of the current CSS philosophy must come from the clinicians who daily face the issues of how to meet the goals inherent in successful programs.

Conceptual Model of Continuity of Care

Continuity of care can be defined in various ways. The

conceptual model for this study views continuity of care as a latent construct that is multidimensional and cannot be measured directly. Therefore, in order to examine the relationships that may exist among variables, the empirical indicators tap into certain measurable dimensions of the construct. The focus of this study is on the administrative outcome of continuity of care, including transfer of paperwork, communication between agencies and whether contact and provision of services occurred.

An emerging model of continuity of care will be developed with the goal of measuring one aspect, the administrative component. This work might then be added to the area of patient's and staff's perceptions of continuity of care for a fuller picture. The conceptual framework guiding this research is a result of the researcher's work in concept development and will be presented in Chapter 3.

Research Questions

Continuity of care is defined in this research as "the successful initiation and maintenance of face-to-face contact by CSB staff with clients in state hospitals, and the provision of services post-discharge." Continuity of care can be viewed as dependent on three components of the mental health system: characteristics of the community, of the provider or CSB, and of the client. For this study, continuity of care will be operationalized by focusing on

the transition period within the context of the discharge process.

The research questions addressed in this study are as follows:

1. To what extent do the CSBs initiate and maintain linkages with clients who are discharged from state hospitals?

2. Are there differences between discharges to rural and to urban areas in the extent to which continuity of care is achieved?

3. What client and service characteristics are related to continuity of care?

Summary and Outline of Remaining Chapters

This chapter provided an overview of the problem associated with lack of continuity of care during the transition between hospital and community for psychiatric patients in the public sector. The history of the policy which requires CSBs to ensure continuous care in the community was reviewed. This study is significant in that it offers a better understanding of the predictors of continuity of care for different groups of clients. Until now, decisions about program planning and resource allocation have been made without adequate data, information and knowledge of the determinants.

Nurses are in a position in both hospital and community

settings, to facilitate continuity of care. This study seeks to examine a specific transition period between hospital care and community care that is critical for ensuring continuity. The concept of continuity and the study of transitions are both important to nursing. With greater knowledge about the factors that influence or impede continuity, nurses and administrators should be able to develop needed programs to fit the population characteristics.

The remaining chapters of the dissertation present a review of the literature, a conceptual framework, research methods, results and discussion. Chapter 2 presents a review of previous research related to this topic. Chapter 3 describes the conceptual framework used in this research, as well as a discussion of the hypotheses. The study sample is described in Chapter 4, along with the research design. Results are presented and discussed in Chapter 5. Chapter 6 includes conclusions based on a summary of research results and suggestions for future research.

Chapter 2. Review of Literature

This chapter contains a review of the literature regarding the relationship between the variables of interest and continuity of care. The literature that supports continuity of care as a desired outcome or dependent variable is presented first, followed by a discussion of definitions of continuity of care.

The chapter concludes with a literature review of the predictor variables included in the conceptual model to study continuity of care. The predictor variables have been organized according to the framework derived from the access to medical care model developed by Aday & Andersen (1975). That model, shown in Figure 2, guides research of vulnerable populations and provides for the examination of both individual perspectives and community or macro perspectives along with their interrelationships. Client characteristics are organized in three groups: predisposing factors (age, gender, and race), enabling factors (living situation, catchment area change, and geographic location of the CSB), and need factors (length of stay, legal status and primary clinical diagnosis).

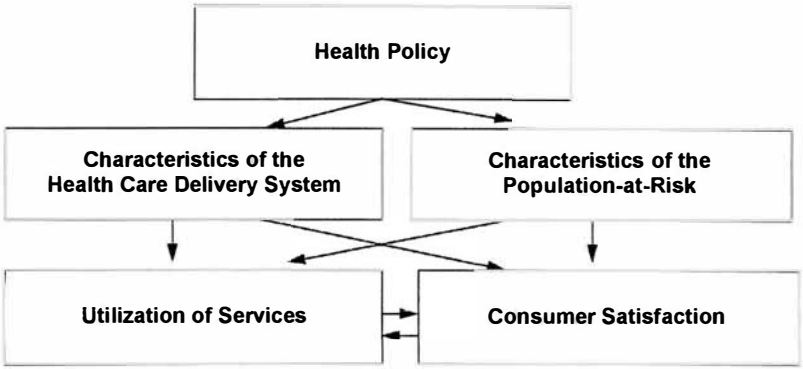

Figure 2. Access to Medical Care

Source: Development of Indices to Medical Care, (p.7), By L.A. Aday and R. Andersen, 1975, Ann Arbor: Health Administration Press.

Continuity of Care as Outcome

Defining and measuring program outcomes has become a challenge for mental health program researchers. One measure of the success of community programs is the extent to which they achieve continuity of care for their clients. While this can be viewed as an organizational outcome, continuity of care is also a client outcome. Continuity of care is a goal of the service delivery system, like other commonly researched outcomes such as community tenure and recidivism. Unlike community tenure and recidivism, however, continuity of care, a complex construct, is more difficult to measure. Rogers and Curtis (1980) stated this most succinctly in their effort to measure continuity of care in primary care settings:

> It seems unlikely that continuity [of care] can be measured in a global sense, nor can all the dimensions be accurately defined. It is therefore important to select and agree upon specific areas of continuity of care which are easily measured, yet have significance when related to outcome studies. (p. 123)

This study focuses on one specific aspect of continuity of care, the inpatient discharge process and transition to

community-based care. While a full model for defining and studying continuity of care would include a great number of variables not selected here, the present research improves understanding of the administrative tracking component. In combination with a global, multidimensional model, this presents a fuller picture of continuity. A global model of continuity of care, developed from the concept analysis, is presented in Chapter 3.

Background for Outcomes Research

The shift in locus of treatment, activated by deinstitutionalization and implemented through state policy initiatives, has stimulated a body of research which examines the important aspects of community treatment and also embarks on the beginnings of outcomes research. Categorized as health services research, both areas incorporate the correlates of community adjustment, community adaptation and community tenure. Avison and Speechley (1984) provide a helpful typology as they divide the services research into four categories: (a) Research on the impact of inpatient treatment modalities on post-hospital adjustment, (b) Research on the effectiveness of community-based alternatives to hospital treatment, (c) Research on the efficacy of community support systems in assisting the former inpatient to adapt to life in the community, (d) Research that identifies social, social-

psychological, and psychiatric correlates of successful community adjustment.

In the case of the fourth category of community adjustment, different measures have been used to determine the extent of successful adjustment. Six of the most common outcome indicators of this adjustment are:

1. Readmission during a specified follow-up period, or recidivism.

2. The proportion of time during the follow-up period that the patient spent in the community after the discharge or, alternatively, the proportion of time spent in rehospitalization, i.e., community tenure.

3. Measures of patients' role performance as indexed by various employment indicators or, in the case of many women, their level of household performance.

4. Measures of social adjustment.

5. Measures of the level of symptoms at the time of interview.

6. Global ratings of outcome that represent combinations of some or all of these measures.

In sum, these indicators for community adjustment are multidimensional and require a variety of data collection tools and analysis procedures. Of the six listed, recidivism and community tenure are the two most closely related to the current study of continuity of care and fit

into the conceptual model. The remaining four indicators of community adjustment are clinically based areas which relate to symptoms, role performance and social adaptations rather than administrative or system issues.

Recidivism. Recidivism is the term used for rehospitalization of individuals with chronic mental illnesses in public psychiatric facilities. Recidivism is by far the most common measure of outcome for community mental health programs (Avison & Speechley, 1984). Research findings show that, despite the policy of deinstitutionalization, the rate of admissions and readmissions eventually increased (Wan & Ozcan, 1991). In service system evaluations, psychiatric rehospitalization rates have often been used as primary performance indicators for community-based treatment programs (Scheffler & Watts, 1986; Wan & Ozcan, 1991). This study, however, proposes that successful linkages between hospital and community are perhaps more valid performance indicators than psychiatric rehospitalization alone. A focus on recidivism rates may miss other important contributors to community tenure that support continuity of care (Solomon & Doll, 1979).

Community Tenure. Community tenure has been defined as the number of days spent in the community after discharge from a psychiatric hospital and before any subsequent readmission. The services in the community were once

referred to as "aftercare" services. However, state systems have increasingly begun to view hospitalization as a part of the community treatment responsibility, and an important component of the community support system rather than a separate entity (Appleby, 1993).

Solomon, Davis, & Gordon (1984) looked at demographic factors and services used after hospitalization in a publicly-funded state mental health system. The researchers determined that the use of "aftercare" services by discharged patients had the effect of extending time in the community. They explored a high rate of readmission that had raised questions about community-based services. The dependent variable, community tenure, was measured in the number of days each patient remained in the community within the year following discharge. Characteristics of patients and use of services were analyzed. They concluded that social demographics and clinical characteristics help identify patient groups at risk, but the variables that can be manipulated by the system, such as number of hospitalizations, have the strongest impact on community tenure.

Some studies have examined the predictive relationship between the single variable of previous hospitalization and frequent rehospitalization (Beiser, Shore, Peters, & Tatum, 1985; Geller, 1986), but none has provided a predictive

model for continuity of care at the level of the individual. Unlike previous studies that evaluated community-based treatment by examining psychiatric re-hospitalization rates (e.g., Turner & Wan, 1993; Scheffler & Watts, 1986) or community tenure (Solomon, Davis, & Gordon, 1984), this research views readmission and community tenure connected in continuity of care as an positive outcome. Subsequently, other positive outcomes including functional independence and quality of life may be facilitated by uninterrupted care.

Case Management

Even though there is a recognition that community-based care must be continuous and uninterrupted (Rosenfield, Caton, Gideon & Robbins, 1986; Kanter, 1989), little is known about the factors that influence the initiation and maintenance of such continuity. One factor commonly assumed to provide for continuity of care is a case management system (Bachrach, 1993; Bond, 1988). However, while case management has been funded and implemented across the country as a method to provide continuity of care, there is little agreement on the theoretical or operational definitions of case management (Robinson, Bergman, & Scallet, 1989; Dincin, Wasmer, Witheridge, Sobeck, Cook, & Razzano, 1993). For this study, case management is considered in terms of the Client Services Management

Guidelines: "To the maximum extent possible, CSBs should ensure that changes in the client's circumstances (e.g., change in level of involvement in services, etc.) do not disrupt the relationship between the client and his/her case manager" (VDMHMRSAS, CSMG, 1988, p. 23).

A focus only on case management systems will not provide answers to questions about the full array of factors that promote or impede continuity of care. In particular, knowing more about the environment to which patients are discharged and in which nurses practice should provide opportunities for enhancing continuity of care irrespective of the case management system employed by the CSB.

Homelessness

A body of research on homelessness and mental illness grew rapidly during the period following implementation of deinstitutionalization (Bassuk, 1984; Bassuk & Lamb, 1986; Lamb & Lamb, 1990). Many of the questions concerned how the Community Support System might help prevent homelessness for the mentally ill population. However, many studies dealt with small numbers or specific subgroups of the homeless such as shelter residents, homeless men and applicants to emergency services (Rog, Andranovich, & Rosenblum, 1987).

In one exploration of this population, Segal and Baumohl (1980) surveyed 295 patrons of a soup line in California. From their data the concept of "social margin"

was developed to indicate the place of homeless mentally ill individuals in American culture. This concept of the 'social margin' reflects the place of homeless mentally ill in the street culture, but also represents a microcosm of how mentally ill individuals often fit into the communities to which they are discharged. Segal, Baumohl and Johnson's (1977) earlier paper title, "Falling Through the Cracks," reflects the often-used phrase for the transition period between hospital stay and discharge to the community, when breaks in continuity of care often occur.

The preceding review shows that the indicators chosen to examine continuity of care vary, including elements of both process and outcome, and usually include one variable that represents discontinuity. This study examines a large data set with multiple variables in order to explore the administrative aspect of continuity of care as an outcome indicator.

Characteristics of the Population at Risk

Determining the numbers of mentally ill in the community has been a complex process for federal, state and local governments. When most of the chronically mentally ill resided in state hospitals, counting them was a relatively simple process. With dispersion into the community, researchers have had to rely on estimation. For example, Goldman, Gatozzi and Taube (1981) used a formula

with the 1980 National Census Data to estimate that there are between 1.7 and 2.5 million persons who are chronically mentally ill. A widely accepted standard for estimating the number of persons in the general population who suffer a serious mental illness is one to two percent. When applied to Virginia's 1990 population, this number would translate to between 46,874 and 93,748 people.

Persons who are discharged from state facilities tend to be a varied and diverse group, with variable and divergent needs for care. Patients with serious mental illness often need a variety of community services in order to adjust to life outside the hospital and, ultimately, to live longer in the community before a subsequent rehospitalization. The first several weeks after discharge are a particularly important time period in which patients are at risk for being lost to services (Tessler & Mason, 1979; Granet & Talbott, 1978).

Public Sector Delivery System

A Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services (DMHMRSAS) survey completed in 1988 showed that approximately 17,500 persons with serious mental illness (SMI) are being served by the State's CSBs (DMHMRSAS Plan, 1991). This number represents 40% of the statewide CSB active caseload. So while different localities vary in their approach to care of the

SMI population, the CSBs do serve a large number of these individuals. Nonetheless, many persons with serious mental illness may go untreated (Goldfinger & Chafetz, 1984). Other potential sources information regarding treatment are the private sector agencies, such as private hospitals and therapists, but their data were not available for this study.

In summary, two main approaches to studying continuity of care appear in the literature. Continuity of care can be viewed as an individual outcome measure, indicating the individual's passage through the system (e.g., utilization rates or satisfaction scores). In addition, continuity of care can be a worthy indicator of the system's response to individualized community services.

Definitions of Continuity of Care

The literature revealed a variety of definitions of continuity of care from the mental health perspective. Historically, ensuring continuity of care for this population of patients with major mental illnesses was not an issue, because patients were institutionalized for long periods of time and community services were not available. Deinstitutionalization and the increase use of community services, however, introduced the complexities and challenges of planning and coordination.

The heterogeneous nature of the group of persons with

serious mental illnesses, along with their varied treatment histories, symptoms, diagnoses and functional statuses has highlighted the need for diversified programs in the community. Moreover, since the clients' service needs often endure over time, continuity of care is needed, yet programs are not set up with long-term trajectories in mind. As Hansell (1978) pointed out, programs tend to be designed for "single-episode users of services" (p.105) rather than for those individuals who have chronic disorders.

Bachrach (1981) defined continuity of care as the orderly, uninterrupted movement of patients among the diverse elements of the service delivery system. She then identified several dimensions of continuity of care which characterize the provider of services. The dimensions include the degree of flexibility, accessibility, comprehensiveness of services, the extent to which services are individualized, and the nature of communication and the relationship between the client and the mental health system.

Bass and Windle (1973) defined continuity of care according to two criteria: lack of obstacles to client movement among an agency's services based upon therapeutic needs, and administrative mechanisms linking present and past care. Hennen (1975) identified five major dimensions of continuity of care: chronological, geographic,

interdisciplinary, interpersonal and informational.

In a study of continuous treatment teams, Test (1979) found the patient's treatment must parallel his or her progress, even though the individual caregiver, specific treatment modalities, or specific site within an agency may change. Tessler, Willis & Gubman (1986) argue for three basic system components necessary to continuity of care: discharge planning, successful and rapid transfer, and implementation of individualized service plans.

Rogers and Curtis (1980) propose five measurable dimensions of continuity of care: provider characteristics, consumer characteristics, encounter types, knowledge base, and the environment. They further state that because continuity of care is multidimensional it will probably require several different approaches both in definition and measurement.

The Robert Wood Johnson Foundation has been one of the largest privately funded organizations to establish research programs to demonstrate improvements in service delivery to the group known as the chronically mentally ill (CMI). In 1988, this foundation decided to concentrate its demonstration initiative for the CMI on five key elements. In addition to a central authority, financing reform, housing, and support services, the list includes, as the fifth key element, continuity of care, which is defined

there as the use of a designated care giver for each client, who coordinates the various components of the service system to meet client needs.

The Robert Wood Johnson definition, like much of the literature, equates continuity of care with case management. Such definitions have reduced the concept to a narrow description of roles and positions within a program. Other studies, like that by Rogers and Curtis (1980), have defined continuity of care so globally (or not at all) that it has little meaning or is difficult to study.

Bachrach (1993) has recently outlined nine principles of continuity of care that are thought to transcend the specific type of case management model. These include: an administrative climate supportive of long-term patients, ready access by patients to the services they need, provision of a full array of services, individually tailored treatments, flexible program offerings, linkages among agencies serving the patient, a continuing relationship between patient and caregiver, patient involvement in service planning, and recognition of cultural factors affecting treatment.

From a service delivery perspective, these principles suggest revision of policy issues such as staffing the community and delivering services in the community. Integration among providers has been an important concern

since deinstitutionalization (Dill & Rochefort, 1989; Provan & Milward, 1994). The link between integration of care and client outcomes seems to guide mental health care policy, yet despite the value of the goal, little is known about the cost and the feasibility of such cooperation (Van de Ven & Ferry, 1980; Provan & Milward, 1994).

In summary, although the definition of continuity of care is at times vague and diverse, it is recognized as an important construct for the understanding of successful community treatment for persons with serious mental illness. Even so, there appears to be no instrument now available that can definitively assess continuity of care with acceptable levels of reliability and validity.

Predictors of Continuity Care

Throughout the literature, continuity of care has been viewed as dependent on three components of the health care system: the client, the provider or CSB, and the community. The following review of literature will summarize the research on characteristics of the population as independent/ predictor variables of continuous care. Further, it will focus on what is known or not known about continuity of care for the seriously mentally ill population.

Characteristics of the Population

Client characteristics are likely to play a major role

in service delivery, particularly influencing the delivery of post-hospital services. The variables are organized and presented as in the Aday (1993) framework: predisposing factors, enabling factors and need factors.

Predisposing variables are characteristics that exist irrespective of the onset of the illness (e.g., age, gender, race) and influence one's tendency to use care. Enabling characteristics of the individual refer to resources which might promote or inhibit continuity of care (e.g., resources specific to the individual, living situation, and geographical location of the community: rural/urban) which enhance the ability to access services. The need component refers to the illness or impairment levels which necessitate care. These variables include the length of stay in the hospital, the admitting legal status, and primary diagnosis (which includes substance abuse, major depression and schizophrenia).

Predisposing Factors

Age. Age is a factor that is found to be significantly associated with all different types of health services utilization (Aday and Shortell, 1988). Older adults are considered high risk for continuity of care for a variety of reasons. Elderly individuals are thought to have multiple physical problems and service needs, young adults with chronic illnesses have their own complications (Blixen &

Lion, 1991). Among community-dwelling older adults, unresolved problems in social, psychological, physical and economic domains can impact ability to live independently in the community (Dyck, Raschko, Florio, Rockwood, 1995).

Young adults are also considered high risk, although the actual ages for which one can be called "young adult" is not clear. It is hypothesized that younger adults tend to differ in their perceptions of mental health care (Pepper, Kirshner, Rygleqicz, 1981; Sheets, Prevost and Reihman, 1982). Young adults are also considered high risk for continuity of care (Bond, McDonel, Miller 1991). In fact, heavy users of costly psychiatric emergency services and increased rates of readmission are often found in the young adult chronic population (Surles & McGurrin, 1987).

Gender. Gender, with age, is associated with not only whether one is predisposed, but also whether one has access to care. For example, young males have increased probability of not being insured. Young males are more likely to be involved in services for alcohol and drug abuse (Aday, 1993). Continuity of care is at risk when gender-appropriate programs are not available, such as when substance abuse programs developed for male clients without regard for women (mothers) who were also diagnosed with substance abuse problems. Women have somewhat higher rates of mental disorders than men in general.

Race. Major differences exist among groups of White, Black and Hispanic in both their use of mental health services and the sites where services are received (Rosenstein, 1980). Whites are more likely to be admitted to private psychiatric hospitals than their non-White counterparts. Although the rate of total admissions per 100,000 was similar between White and non-White in the civilian population, the admissions to state and county inpatient services was far greater for the non-White population (Rosenstein, Milazzo-Sayre, & Manderscheid, 1990). The differential rate was 299.8/100,00 for non-Whites versus 106.7/100,00 for the White admission. Non-Whites were admitted for outpatient services to state and county mental hospitals at a rate of 33.8/100,000 compared to 22.5 for Whites (Rosenstein, Milazzo-Sayre, & Manderscheid, 1990).

In the area of utilization of services, race has also been a subject of study. Armstrong, Ishiki, Heiman, Mundt, & Womack (1984) concluded that Blacks have a higher dropout rate from mental health services than Whites.

While many studies have shown that variables such as age, gender, race and even length of stay, diagnosis and use of substances are related to readmission (Surber, Winkler, Montelone, & Havassy, 1987), less is known about how these same variables affect the smooth transition between hospital

and community care in an effort to continually provide care.

Enabling Factors

Living situation. Living situation is defined as the residential placement for discharged patients. Placement options are often limited and housing has been identified as a major need of persons with serious mental illness (Carling, 1990; Levine & Haggard, 1989). The placements in Virginia typically include DMHMRSAS facilities, CSB-sponsored placements, home of non-relative, nursing homes, and boarding homes in addition to one's own home or home of a family member.

The extent to which patients in state facilities are clinically improved but have delayed discharge contingent upon a housing opportunity is thought to be substantial. Aviram, Minsky, Smoyak and Gubman-Riesser (1992) estimated that 20-40% of the state hospital population in the United States could be discharged given the availability of resources in the community. The lack of appropriate housing in those first weeks post-discharge may take the individual farther away from the original site of follow-up services.

Catchment change in location. Characteristics of the environment may affect how patients who leave the hospital attain continuity of care. Patients who leave the hospital and are discharged to another area of the state are probably at risk for discontinuous care. For example, placement to a

new area of the state upon discharge may include moving and the possibility that the person may not know the area, may not know the people or have family in the areas and may be unknown to the mental health care system. These persons discharged to a new area are referred to as "out-of-catchment placements," and such patients might be considered a high risk group. Extra efforts must be made by the discharge CSB to provide continuous care to a client who was admitted from a different CSB. However, without knowing the special needs of this group or if, in fact, special programs are needed to assure continuity of care, little can be done by facilities and CSBs to target patients discharged to another area of the state of Virginia.

One area of the state has a unique arrangement in which the hospital hired community liaison workers who then communicate directly with the patients and the CSB staff to coordinate discharge planning. While the initial purpose of this program was to enhance continuity, it is not clear, without data, what difference this type of mechanism makes for continuity of care as an outcome compared to other regions without this special liaison role.

Placement to a different catchment area may depend on available housing options. Some areas of the state have more variety in housing options than others. If housing is a local issue, a person admitted from one of the more

densely populated area of the state may be discharged to the southern rural areas where housing may be less expensive, and where more licensed (and unlicensed) adult homes may be available.

Rural residences. Research in mental health has long ignored the rural/urban variable, and most research has looked primarily at urban clients (Daniels, 1986). The focused research on rural mental health identifies similar problems in rural "mental health" care access and rural "health care" access: transportation, staffing issues, cost effectiveness of small programs and protection of confidentiality (Wagenfield, Murray & Mohatt, 1994; Cuffel, 1993).

In a review of managed care, the Jackson Hole Group (1993) concluded that, because of socioeconomic factors, rural residents postpone health care until their health problems become more acute, or go without it altogether. While the research addressing this issue is inconclusive, there is reason to believe that rural residents have more limited access and less utilization of both mental health and general health services than do the urban residents.

At the individual level, research has examined the differences between rural and urban persons in a variety of personal dimensions. Flaskerud and Kviz (1983) found that rural residents will choose help for problems according to

their perception of the character of their illnesses. Bachrach (1983) compared persons living in rural and in urban areas and found that those in rural areas tended to hold more traditional values, be more kinship-oriented, and develop interpersonal bonds in more informal ways. However, little is known about how these apparent differences affect continuity of care.

Need Factors

Length of stay. Length of stay usually refers to the number of days between admission and discharge for a particular episode of care for a patient in a facility. Staying in the hospital only briefly may facilitate continuity of care, whereas longer stays may make continuity less feasible. However, clinical anecdotal evidence that points to this assumption has not yet been supported by the performance of conclusive investigations.

Legal status. The legal status of an admission denotes whether the individual has been admitted voluntarily, or involuntarily (including criminal involuntary status). Tessler (1987) studied primarily young white males to determine the relationship between client characteristics and community adjustment. Two of the clinical status variables used were length of stay and legal status. Using multiple regression and discriminant function analysis, he found that both of these variables have less

impact on community adjustment than the variable which looked at the number of recommended services not received.

Primary diagnoses. One of the most direct measures of need for services is the clinical diagnosis. The clinical diagnoses for the discharges from state psychiatric facilities includes the following: alcoholism, drug dependence & intoxification, organic brain syndromes, depression, schizophrenia, other psychoses, other neuroses, personality disorders, pre-adult disorders, other mental disorders, social maladjustments, general psychiatric exams, nonspecific conditions and mental retardation. Barbato, Terzian, Saraceno, Montero, and Tognoni, (1992) reviewed patterns of care for discharged patients in light of the Italian reform and changes with their 1978 Mental Health Act. They found that continuity of care was achieved for half of the sample, most likely those with diagnoses of severe mental disorders. Discharged patients with diagnoses of substance abuse are less likely to continue with services as designated in the discharge plan (Durell, Lechtenberg, Corse & Frances, 1993; Bachrach, 1986).

For the diagnosis of schizophrenia, it is known that schizophrenia is a chronic and debilitating disease (Tessler & Goldman, 1982; Test & Stein, 1978). How this affects continuity of care is unknown.

For this study, the variable for diagnosis is examined

according to whether the discharged patient had any of the following primary diagnoses: schizophrenia, substance abuse, and major depression.

This chapter reviewed literature related to continuity of care, outcomes research, and variables of the population at risk. It began with a summary of research related to continuity of care as an outcome, including a review of relevant constructs: recidivism, community tenure and case management and homelessness. The subsequent review of findings from several empirical studies demonstrated the need for a better understanding of the characteristics of this population that influence continuity of care. The literature findings also lead to additional questions about continuity of care. The questions this analysis addresses will be formulated and hypotheses will be developed in the next chapter.

Chapter 3. Theoretical Framework

The review of literature presented in Chapter 2 indicates that continuity of care is a multidimensional concept that can be studied in a variety of health care settings. In mental health, continuity of care has been considered both a service assumption and a desired outcome of service delivery. Patient, provider and environmental characteristics interact to create a complex and dynamic concept. There are numerous ways in which to define and study this phenomenon from the public mental health care system vantage, depending on the perspective of the patient, provider or environment. This study examines the empirical indicators of an administrative dimension of continuity of care.

Policy Literature

Improved continuity of care has emerged as an important goal of mental health policy (NIMH, 1991). Therefore, it is helpful to begin with policy as a starting point for understanding the concept. This analysis examines how policy alters continuity of care, and the subsequent implications for programs.

Policy analysis involves "an effort to develop and test general propositions about the causes and consequences of public policy" (Dye, 1987, p.7). One of the professional reasons for studying public policy is that it can be applied to practical problems. In this way, an understanding of public policy can assist mental health professions to plan for the "what if" situations. For example, what if the discharged person goes to a rural CSB, or has a substance abuse diagnosis, or has had a long length of stay in the hospital? How will these factors affect continuity of care?

Indicators of the continuity of care concept involve two main categories in the policy literature: process and outcome. The process indices refer to the independent variables or predictors of the outcome of health policy. They reflect the characteristics of the delivery system and the population-at-risk that affect whether entry to the system is gained and subsequent consumer satisfaction, two common outcome measures. The process measures may be further classified according to their degree of influence by health policy. Examples of policy-immutable properties are age, gender, and race. Mutable properties are ones that health policy seeks to alter, such as residential placement, length of hospital stay and catchment area discharges.

Virginia Policy

The state of Virginia's policy for continuity of care

is provided in the Client Services Management Guidelines of the Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services (VDMHMRSAS, 1988). These are a set of guidelines that provide the framework within which the CSBs and state psychiatric facilities are to fulfill their respective client service management objectives and offers this introduction to the policy:

> Clients do not "exit" the community service system when hospitalized in state psychiatric facilities. Rather, hospitalization in a state facility is understood to be one phase of the clients' individualized treatment program, and all clients who are receiving inpatient care in state hospitals are considered to be clients of community services boards. While state psychiatric facilities have clear responsibilities for the day-to-day provision of inpatient services, community services boards are expected to maintain their involvement in their clients' care to a degree that enables the Boards to effectively carry out their client service management functions. (p.13)

Thus, in Virginia the CSBs have designated responsibility for community services in an ongoing manner, regardless of the patient's hospitalization status, as set forth in state policy and regulation (Code of Virginia, 37.1-98, 37.1-197.1). The procedures through which Virginia's CSBs and state psychiatric facilities are to meet that responsibility are documented in the Guidelines. The policy for delivering services to discharged patients is

developed in the following example: the client's discharge plan "must include an appointment with a CSB program representative scheduled within a week of the discharge" (p.18).

In the Guidelines, the CSB is instructed to ensure that the client either is involved in CSB programs or is given a comprehensive face-to-face evaluation to assess adjustment to the community placement and to reassess the adequacy of the plan and support system. These guidelines focus primarily on emergency service and crisis intervention services that serve to minimize the inappropriate utilization of state hospital inpatient resources. The brief section on "post-hospital follow-up by the community" provides little direction for the CSB to set standards based on research about individual differences in achieving continuity of care, identification of groups at risk for becoming lost to services, and the long-term nature of major psychiatric disorders (Strauss, Hafez, Lieberman, and Harding, 1985).

Assumptions Underlying the Study Framework

Factors that influence the successful or unsuccessful continuity of care for persons discharged to the community from public psychiatric facilities are elements of the theoretical framework. The assumptions will be stated first, followed by elaboration of the conceptual bases for

the model. Subsequently, a working model of the study will be presented.

The importance of continuity of care rests on the assumption that "receipt of aftercare helps patients stabilize themselves in the community" (Tessler, 1987, p. 40). It is with this assumption that other studies stop short, relying on broad and ambiguous definitions of continuity of care. This study makes a second assumption: that community programs view hospitalization as part of the system of care. Rather than criticize rehospitalization as a failure of the treatment system or the individual client, they view hospitalization as an appropriate treatment modality during certain phases of the course of the disorder (Strauss & Carpenter, 1985). The present study assumes that continuity of care may be influenced by characteristics of the individuals and their communities.

Role of Theory in this Study

Assumptions provide the basis on which the relationship between theory and research is built. They explain the importance of a conceptual framework in relation to the research questions and methods. Once the assumptions provide a base, the conceptual framework guides the methodology for research by concentrating the focus onto certain concepts and their relationships. By placing these concepts in a distinctive context, the conceptual framework

guides theory development by directing which questions to ask and how the data fit together.

This study attempts to formulate a meaningful theory about continuity of care for patients discharged from state psychiatric hospitals to community settings. The Community Support System philosophy guides this research to examine individual characteristics of discharges as well as provider and environmental characteristics. This model follows the tenets of sociologist James Coleman (1990), who suggests that in order to formulate meaningful theories or explanations of social phenomena, both the macro (collective) and the micro (individual) levels of observations and analysis and their interrelationships must be examined.

Continuity of care is a phenomena which seems to require multi-level analysis. A focus solely on individual demographics might overlook any larger impact of the environment for which the individual has little or no control (such as living situation, out-of-catchment discharges, and geographic location of the CSB). A focus only on the community level would fail to illuminate the fullness of individual differences in achieving continuity of care. Additionally, measurement of collective or macro phenomena at the individual level of analysis tends to bias the explanations of the phenomena.

Theory is an aid to clarity (DeVellis, 1991). The process of theory building can be considered an iterative one. As outlined by Hanson (1958), the process of "retroduction" uses both inductive and deductive approaches sequentially in order to develop a theoretical formulation. The design of this study is based on a conceptual synthesis which employs multiple strategies in the theory development process.

Continuity of care is just one theoretical concept within the multiple conceptual aspects in a study of full service delivery, as depicted in the Model for Continuity of Care Policy Development and Outcomes, Figure 3.

In Figure 3, the state mental health policy is at the top, guiding the flow as policy develops and outcomes evolve. Client characteristics, which will be outlined more fully in the conceptual model (Figure 4), are determinants of continuity of care and other outcomes. In addition, this full model shows the relationship of environment (community and CSB characteristics) to the outcomes and to policy development.

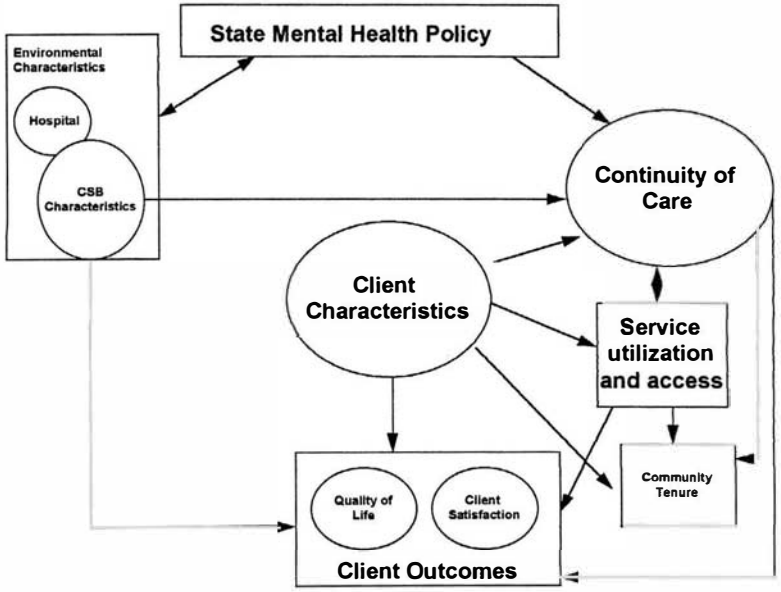

Figure 3. Model of Continuity of Care Policy Development and Outcomes

While the Model of Continuity of Care Policy Development and Outcomes (Figure 3) shows continuity of care as one of several possible dependent variables (including community tenure, client satisfaction and quality of life), Figure 4 illustrates the relevant portion of the full model for this study in a conceptual model for continuity of care. In Figure 4, the state mental health policy remains at the top. For this model, predictor variables include client characteristics which are both demographic and service related.

Based on the Aday (1993) model for studying at-risk vulnerable populations, client characteristics can be categorized into three distinct factor groups: predisposing factors, enabling factors and need factors. Predisposing variables are characteristics that exist irrespective of the onset of the illness. Enabling characteristics of the individual refer to resources which might promote or inhibit continuity of care. The need component refers to the illness or impairment levels.

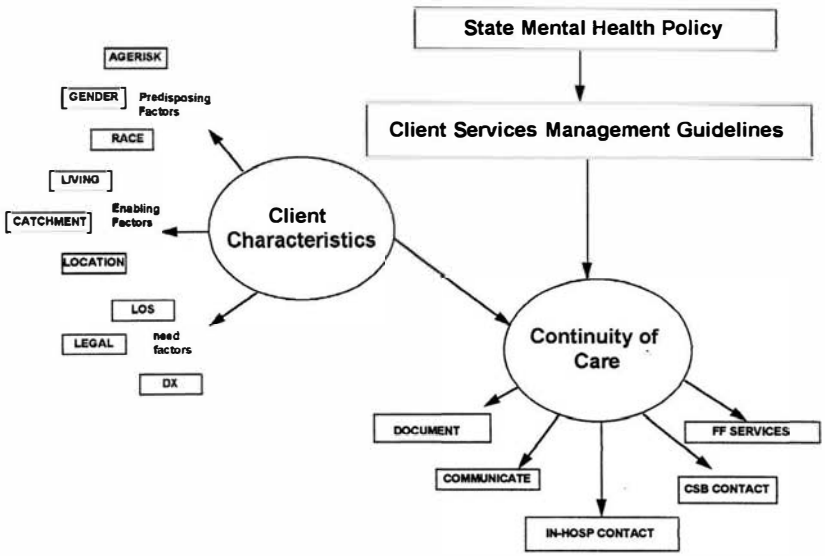

Figure 4. Conceptual Model for Continuity of Care

Figure 5, the continuity of care CTE structure, is a summary of how the two conceptual frameworks form an umbrella over the development of the theory, continuity of care. In this particular study, the dependent variable, continuity of care, has 5 empirical indicators: document, communicate, in-hospital contact, CSB contact and face-to-face services. This CTE structure, as shown in Figure 5, draws on unique aspects of two conceptual frameworks: the Community Support System (CSS) and the Vulnerability Model (Aday).

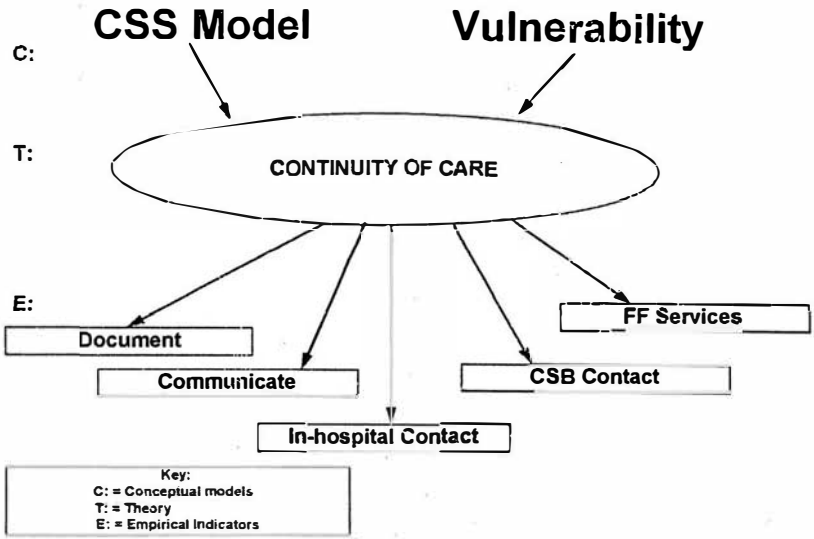

Figure 5. Continuity of Care Conceptual-Theoretical-Empirical (CTE)

Conceptual-Theoretical-Empirical (CTE) Structure

Depicted here as a multidimensional or latent variable, continuity of care can have several empirical indicators or measures. The proposed model shows how the empirical indicators can be developed for the administrative component as a way to study one aspect of the model. Presented here are those indicators for which data can be gathered to ascertain whether there was continuous transition from state hospital to community program. Thus, the empirical indicators in this study are: 1) documentation, 2) communication, 3) in-hospital contact by CSB staff 4) CSB contact after discharge and 5) face-to-face service delivered.

A CTE structure is a visual guide for examining continuity of care and testing relationships between concepts and variables (Fawcett & Downs, 1992; Walker & Avant, 1988). While there are many methods for empirically examining continuity of care, Aday's (1993) vulnerability model for examining utilization of health services provides the conceptual framework for this study and the method chosen for this examination in combination with the tenets of the Community Support System (CSS) philosophy, both of which are outlined below.

The Community Support System

The Community Support System (CSS) philosophy, a

conceptual model developed by the National Institute of Mental Health (NIMH), (Turner, 1977; Turner and Tenhoor, 1978; NIMH, 1982) provides a set of abstract and general concepts for the study of continuity of care. The CSS philosophy supports the unit of analysis as the individual discharge. It also recognizes the importance of continuity of care in the transition from hospital to community.

Some of the assumptions of the CSS philosophy involve the recognition that persons with serious mental illness are a heterogeneous group. In fact, persons discharged from psychiatric stays may require a variety of individualized services, differing one from another.

As defined by NIMH, a CSS is a "network of caring and responsible people committed to assisting a vulnerable population to meet their needs and develop their potentials without being unnecessarily isolated or excluded from the community (NIMH, 1982, 1). Thus the system may be losing certain individuals during the transition because there are unique needs that are not addressed by current community offerings of programs and services.

Vulnerability

The conceptual model of vulnerability also provides guiding principles for this study. Aday (1993) defines being vulnerable to others as: "to be in a position of being hurt or ignored, as well as helped, by them" (p.1). Over

the last two decades of health services research, the conceptual framework developed by Andersen and Aday (1975) to explore access to care has been influential in the study of service delivery. Although originally developed for application to general health services, it has been extended to other types of utilization and access, including maternal child services (Carlton and Poole, 1990) and mental health services (Sommers, 1989).

Subsequent to the initial development of the conceptual framework, Aday (1993) expanded the perspective to incorporate the concept of vulnerability as a guide to research in a variety of fields (i.e. children, elderly, disabled) through the conceptualization of populations-at-risk. One of the several groups identified by Aday (1993) as vulnerable is the population of concern in this study: the seriously mentally ill. Through extensive research on vulnerable populations, Aday's concepts of at-risk and vulnerability provide a framework to guide the development of relevant research and policy agendas in addressing the health care needs of vulnerable groups.

This framework is applied to the current study of the concept of continuity of care with a specific vulnerable population, discharged psychiatric patients. The unit of analysis varies based on the goal to examine the systems perspectives, the individual characteristics and the

interrelationships between them. Continuity of care is thus associated with both the characteristics of the health delivery system and characteristics of the population at risk. The vulnerable population in turn is characterized in this model as having predisposing, enabling and need characteristics. Using a subset of variables representing the proposed model, the present analysis seeks to understand the factors associated with continuity of care which will help inform policy and program decisions.

Continuity of Care from a Service Delivery Perspective

The CTE framework described within this paper provides a foundation for examining and testing relationships between concepts using measurable variables. Research is needed to develop a better understanding of how local communities keep track of discharged clients. According to NIMH (1991) much work is needed in the measurement area: "operational measures of the various hypothesized dimensions of continuity of care should be developed. Measures which assess these dimensions from multiple perspectives (patient, provider, and family) may be important" (p.28).

In conclusion, this study examines one of the major dimensions of continuity of care from the provider perspective by looking at an administrative follow-up function during the transition between hospital and community-based care.

Individuals with serious mental illness are vulnerable to lost contact with services during changes in service settings. In the transition from hospital to community, continuous and coordinated care are both desirable and necessary for quality service delivery and successful patient outcomes (Mechanic, 1986; Rosenfield, Caton, Gideon, & Robbins, 1986). A lack of continuity between hospital and community-based mental health care places the patient at risk for becoming lost to further services. Furthermore, readmissions, and thus more costly services, can be a consequence of inadequate continuity of care between hospital and community (Green, 1988).

Hypotheses

The present study is exploratory. There is concern by CSBs and state agencies that shrinking budgets and increased severity of clients will hinder quality of care efforts. Continuity of care, in this study, provides one measurable indicator of how CSBs are doing. The review of literature does not identify conclusively which client characteristics or clinical factors might identify high vulnerability for not achieving continuity of care as an outcome. Although this is an exploratory analysis, there is support for some hypotheses to be stated directionally.

The first research question of this study is: **To what extent do the CSBs initiate and maintain linkages with**

clients who are discharged from state hospitals? There is no hypothesis testing associated with this research question, due to its descriptive nature. The question is examined by analyzing the data from a different level, the CSB. CSBs are considered subjects in this study and thus have their specific information kept confidential. However, pooled data from rural and urban CSBs as a group can be analyzed with contingency tables. The analyses for each of the five indicators of continuity of care are presented.

The following assumptions are derived from the theoretical framework and guide the second and third study research questions. The assumptions are: 1) There is a difference in continuity of care between discharges to rural versus urban areas 2) There is a relationship between client characteristics and continuity of care.

The second research question and related hypothesis are as follows: **Are there differences between discharges to rural and urban areas in the extent to which continuity of care is achieved?**

H1: Persons discharged to rural areas will receive lower levels of continuity of care than persons discharged to urban areas.

The third and final research question is: **What client and service characteristics are related to continuity of care?** The conceptual model of continuity of care (Figure 4) provides a guide for examining how predisposing, enabling

and need factors influence continuity of care. From a policy perspective, the mutable or changeable effects of enabling factors will be considered and explored for possible changes. Knowing which predisposing and need factors are instrumental in continuity of care can provide guidance around program development.

Thus, for the second and third question, the following hypotheses establish the proposed exploration of relationships between variables:

H2: Discharged persons who are African American will receive lower levels of continuity of care.

H3: Discharged persons who have diagnoses of substance-related disorders will receive lower levels of continuity of care.

H4: Discharged persons who go to a different catchment area than the admission catchment area will receive less continuity of care.

This chapter presented a theoretical framework for continuity of care developed from the concepts of vulnerability and access to care, and from principles of the Community Support System. The Model for Continuity of Care Policy Development and Outcome leads to the conceptual model, which guides research assessing the influence of client characteristics on continuity of care. In the next chapter, methods used to analyze the data and to examine the research questions and hypotheses are discussed.

Chapter 4. Research Method

In this chapter the research design of this study is described, including the analysis and instrumentation. In addition, explanations of how the study population was obtained, data sources used, measurement of variables, and the plan for developing theory are presented. The summary of study design is followed by a description of analytic strategies, strengths and limitation of the study methodology.

The purpose of this study is to identify determinants of continuity of care for persons who are discharged from state psychiatric facilities to the community mental health system in Virginia.

Setting

The Virginia public mental health system includes 9 state hospitals and 40 community services boards (CSBs). The state hospitals are directly operated by the Department of Mental Health, Mental Retardation and Substance Abuse Services (DMHMRSAS) and are responsible for providing inpatient psychiatric services. Eight of the hospitals

serve adults. The CSBs are agencies of local government and are responsible for providing mental health, mental retardation and substance abuse services in designated catchment areas. Eleven CSBs serve a single jurisdiction (i.e., county or city), 29 serve between 2 and 10 jurisdictions. The DMHMRSAS has developed a typology of CSBs that categorizes them as rural or urban. Twenty three of the forty CSBs fall in the rural category, leaving 17 in the urban category.

Population

The population of interest for this study was all discharges from the public psychiatric hospital system for fiscal year 1992 (FY 92). This included discharges of clients to community residential programs, private psychiatric hospitals, general medical hospitals, and private therapists. Specifically excluded from the study were: 1) children and adolescents (i.e., those under 18 years of age), 2) those who were transferred to or discharged and immediately admitted to another facility (e.g., correctional facility, state hospital or training center, or Veterans Administration hospital), and 3) those who were discharged out of state. A total of 6,508 discharges meeting the study criteria were identified through DMHMRSAS's automated reimbursement system (ARS).

Community services boards with over 200 discharges were provided with the option of completing the questionnaires on a two-thirds random sample of discharges to reduce the burden associated with completing the questionnaires. Of the 14 CSBs which were permitted to use a random sample, 12 CSBs did so. This resulted in 5,240 discharges in the sample.

Sample

All 40 CSBs in the state participated in a survey, describe below, of discharges from the eight state psychiatric facilities serving adult psychiatric patients. Of the 5,240 discharges included in the original sample, questionnaires were completed on 5,069 discharges, for a return rate of 96.7%. After surveys were verified to assure they had been sent to the correct CSB, they were merged with a separate data set containing information on basic patient demographics and treatment history. Thus, the final sample size consisted of 4,929 cases, 94% of the original sample.

Survey Procedures

In order to address the research questions, a survey, partially funded by the Southeastern Rural Mental Health Research Center (SERMHRC), was conducted in which CSB staff were asked to complete a questionnaire on individuals discharged to their CSB in FY 92. A questionnaire was

requested for each adult discharge from a state psychiatric facility to a community setting in Virginia meeting the inclusion criteria as previously outlined.

The study used a descriptive and correlational approach to examine a cross-section of discharges. Questionnaires were sent to the CSBs during the last week of September 1992; approximately three months after the last discharge in FY 1992. The mailing address to which the client was discharged was used to identify the CSB responsible for providing post-hospital services and for completing the questionnaire for a client. CSB staff were asked to complete the questionnaires based on a review of client records.

Questionnaires and identifying labels (i.e., patient's name, facility discharged from, register number, CSB discharged to, and date of discharge) were sent to the appropriate CSB executive director with the request that the questionnaires be completed and returned within six weeks.

One hundred forty eight surveys were returned by the CSBs with an indication that a given patient had not been discharged to their CSB. In these cases, attempts were made to ensure that the accurate CSB received the survey. Eight-six of these records were found to have been sent to an incorrect CSB. Sixty-eight were then recoded correctly by the appropriate CSB. A small number (n = 18) were never returned and therefore not included in the sample.

All surveys returned completed but with an indication of "no record" were double-checked for the accuracy of the CSB. Once all surveys were returned, a list of all discharges for which the CSBs indicated they had "no record" (n = 880) was sent to the facility medical records department for verification that the questionnaire had been sent to the appropriate CSB. In 68 cases, a different CSB than the CSB originally identified was determined to be responsible for post-hospital services, and these were then recorded accurately.

After the above verification processes were completed, the dataset containing questionnaire responses was merged with a second data set containing information on basic patient demographics generated from ARS. The merged data set showed 140 records without matching information, including the 18 cited earlier, and these also were not included in the sample. The final sample was 4,930 cases, 94% of the original sample. These procedures are summarized in Table 1.

Table 1

Sampling Results

Procedure	Sample Size
All discharges	6,508
After sampling	5,240
Completed questionnaires	5,069 (97.7%)
Merged data set	4,929 (94%)
With weighting	6,093

Note. Weighting of 2/3 for CSBs allowed to take sample

Data Sources

The primary data source for this study was an eight-item questionnaire, the Discharge Follow-up Questionnaire (DFQ), used in the survey described above (See Appendix A). The DFQ addresses such dimensions of continuity of care as communication, rapid transfer, community staff contact while in the hospital, face-to-face contact after discharge, and provision of services. The questionnaire was developed using technology that enabled the recipient to fill in boxes with the correct information using leaded pencils. The surveys were then scanned electronically and imported to a spreadsheet for statistical analysis. The questionnaire items are listed below:

1. Whether the CSB has a record of the discharge.
2a. Whether the CSB was notified by the facility of the discharge.
2b. Date CSB was notified of the discharge.
3. Whether the CSB had face-to-face contact with the client during hospitalization.
4a. Whether the CSB had contact with the client after discharge from the facility and before any subsequent hospitalization.
4b. Date of first contact with the client following discharge.
5a. Whether the CSB provided face-to-face services after discharge.
5b. If services were not provided, the reason why not.
6. Date services were initiated.
7. Date of last or most recent face-to-face contact with the client, before October 1, 1992.
8. Reasons services were discontinued (if applicable).

The underscored items indicate the five major indicators of continuity of care (i.e., dependent variables).

Additional information on the clients was obtained from DMHMRSAS's inpatient database (i.e., ARS). The following information was obtained from this source:

1. Age
2. Race
3. Gender
4. Primary diagnosis at discharge
5. Admission type
6. Admitting legal status
7. Length of stay
8. Discharge living situation
9. Admitting and discharge CSB

The following two tables summarize the variables and brief definitions of each. Table 2 summarizes the available

variables from each different data set. In addition, a number of new variables were created from existing variables. For example, the primary diagnosis variable was re-coded to specifically compare substance abuse as a primary diagnosis with all other diagnoses.

Table 2

Study Variables in Data Set

Variables from the survey	Variables from DMHMRSAS
*FACILITY	*FACILITY
*REGISTER NUMBER	*REGISTER NUMBER
CSB answering survey	DISCHARGE/ ADMITTING CSB
DOCUMENTATION	ADMISSION DATE
COMMUNICATION	DISCHARGE DATE
IN-HOSPITAL CONTACT	BIRTHDAY/ AGE/ AGE GROUP
CSB CONTACT	RACE
FACE-TO-FACE SERVICES	GENDER
IF NO SERVICES, WHY NOT?	MARITAL STATUS
WHY WERE SERVICES DISCONTINUED?	TYPE OF ADMISSION
	RESIDENTIAL PLACEMENT
DATE OF FIRST CONTACT BY CSB	PRIMARY DIAGNOSTIC
DATE INITIATION OF CSB SERVICES	ADMITTING AND DISCHARGE
	LEGAL STATUS
	LENGTH OF STAY/LOS
Additional variables created:	
LOCATION CATCHMENT COMPARISON	SUBSTANCE ABUSE DX

Note. *FACILITY and REGISTER NUMBER were combined for a unique identifier. CSB=COMMUNITY SERVICES BOARD.

Data Analysis

The research questions were addressed through an analysis of the data using contingency table analysis, analysis of variance and logistic regression. Since there were multiple indicators of continuity of care, each of the five indicators were initially examined independently. Next, the dependent variable for the analyses of primary interest, the successful versus unsuccessful implementation of continuity of care, was obtained from developing a continuity of care score, based on a sum of the five indicators.

The unit of analysis for the study was the individual discharge. There may have been more than one discharge during the year for a particular individual, but each discharge was evaluated separately.

The analytic technique was based on a multivariate approach that identifies socio-demographic and clinical variables associated with continuity of care. The approach is based on a one-way analysis of variance (ANOVA).

In addition to ANOVA, the results were analyzed with logistic regression, considering the dependent variable as categorical, continuity of care or discontinuous care. Logistic regression procedures were used to determine the impact of the independent variables on the dependent

variable: continuity of care as measured by the CCSCORE. Furthermore, dummy variables were created for the logistic regression analysis, (e.g. substance abuse diagnosis or not, schizophrenia diagnosis or not, major depression diagnosis or not). Table 3 shows the definitions of variables as coded for the logistic regression.

Table 3

Definitions of Variables

Variable	Measure
Predisposing Factors	
AGERISK	High-risk age group = 1; 26-65 years = 0.
GENDER	Male = 1; Female = 0.
RACE	Black = 1 White and Other = 0.
Enabling Factors	
LIVING	Own home or home of family = 1 Other placement = 0.
CATCHMENT	Discharge CSB different from the admitting CSB = 1, same CSB = 0.
LOCATION	Rural CSB = 1; Urban = 0.
Need Factors	
LOS	In hospital less than 2 weeks = 1.
LEGAL	Voluntary admission = 1; involuntary = 0
SA DX	Substance abuse primary diagnosis = 1.
DEPRESS	Major depression primary diagnosis = 1.
SCHIZ	Schizophrenia primary diagnosis = 1.
Dependent Variable	
DOCUMENT	Did CSB have a record of the discharge? (1 = Yes, 0 = No).
COMMUNICATE	Did facility notify the CSB of the discharge? (1 = Yes,0 = No).
IN-HOSP CONTACT	Did CSB have contact while in hospital? (1 = Yes, 0 = No).
CSB CONTACT	Did CSB have contact after discharge? (1 = Yes, 0 = No).
FF SERVICES	Did CSB provide face-to-face services? (1 = Yes, 0 = No).
CCSCORE	Continuity (all 5) = 1; No continuity = 0
CCARE	Continuity of Care based on 0 -5

Logistic regression is a statistical procedure for evaluating relationships of several independent variables (risk factors) with a dichotomous outcome variable (Munro & Page, 1993). Logistic regression does not require continuous independent variables that are normally distributed. Furthermore the dependent variable, as in this study, may be highly skewed. Since all the risk factors in this study are not continuous and the continuity of care CCSCORE distributions are skewed, logistic regression is a very appropriate tool for the data set being analyzed (Pandiani, Schacht, Banks, & Ellermann, 1995).

All of the variables were dichotomized for purposes of statistical analysis. Continuity of care, the dependent variable, was dichotomized at high (all 5 elements present) and low (less than 5 elements present). The presence of all 5 elements is interpreted as high continuity of care, whereas any thing less is considered low. Age was considered a risk factor by combining the old (> 65 years old) and the young adult (between 18 and 25) and was thus dichotomized as high risk age group and low risk age group (middle age adults). Although age was initially a continuous variable in the data set, it was created as a categorical variable in order to be able to compare odds ratios with the remaining independent variables.

Race was treated as a dichotomous variable: black or not. Gender was coded as male or not. In addition, living situation was made dichotomous: discharged to own home or home of family (home) or not (e.g., other residential placements such as nursing homes, boarding homes, home of non-relatives, CSB-sponsored placements, DMHMRSAS-sponsored placements). The variable catchment was categorized as whether the individual was discharged to a CSB that was not the same as the admitting CSB; rural was made a dichotomous variable, rural or not.

Rural CSBs were defined based on DMHMRSAS classification for policy and planning which is consistent with the Southeastern Rural Mental Health Research Center's recommendation for research on rural CSBs. Rural CSBs were defined as having a population density of less than 120 per square mile, while the population density in urban CSBs exceeds 120 per square mile (VDMHMRSAS Virginia Comprehensive State Plan, 1991).

For the need factors, length of stay and legal status were dichotomized as short length of stay (less than 2 weeks) or not and as voluntary admission or not. Diagnoses were coded with dummy variables to reflect the following: substance abuse as the primary diagnosis or not, schizophrenia as the primary diagnosis or not, and finally depression as the primary diagnosis or not.

Odds ratios were established to determine the probability of the predictor variables affecting the success of continuity of care. Odds ratios provided by this procedure are very useful for assessing the impact of the risk factors on continuity of care. Odds ratios represent the relative chance of a person with the stated characteristics will achieve continuity of care.

Mathematically, the odds ratio is the *e* or the base of the natural logarithm 2.718 raised to the power of *b*. It is the ratio of one probability to another. The logistic regression coefficient (*b*) is the change in the log odds associated with the one-unit change in the independent variable with the other variables held constant (Munro & Page, 1993, p.240).

Design Assumptions

For the purposes of this study, it is assumed that information provided by the case managers and CSB staff is accurate, valid and complete. It is also assumed that the CSB staff were interested in providing accurate information for their own benefit. Detailed CSB-specific reports were compiled for each CSB for their verification of perceived accuracy and for their future use. For the purposes of this study, it is also assumed that all discharges are the responsibility of the CSB according to state policy.
A limitation of the design includes the inability to use

duration data to verify time between discharge and receipt of services. A strength of this design includes the collaboration between state agencies, local CSBs and the university as a cooperative research design.

This chapter provided detail about the methods employed in the present study. The data sources were reviewed: Discharge Followup Questionnaire Data for the DMHMRSAS Continuity of Care Project and the demographic data from DMHMRSAS ARS.

This is an exploratory study looking at the dependent variable, continuity of care, as measured by the Discharge Followup Questionnaire. The two subgroups of interest are rural discharges and urban discharges. The variables for the current study include predisposing, enabling and need characteristics of the clients. The analytical strategies include univariate and multi-variate analyses. Logistic regression is the specific technique used to explore the research hypotheses. The chapter concluded with a review of the assumptions, limitations, and strengths of the study design. A discussion of the results of the analyses is provided in Chapter 5.

Chapter 5. Empirical Results

The data analysis techniques presented in Chapter 4 are presented more fully in this chapter, along with the empirical results. Results of the descriptive statistics and analysis of variance are presented initially. This section is followed by the results of logistic regression.

Of the 5,240 discharges included in the original sample (after random sampling), questionnaires were completed on 5,069 discharges for a return rate of 96.7%. After surveys were verified, the final sample consisted of 4,930 cases, 94% of the original sample. For analyses, cases were weighted to reflect the sampling procedure, for a final sample of 6,093.

Characteristics of Sample

Descriptive findings for the sample show that the median age was 38 years, and more than a quarter were in the high- risk age category which comprised ages 18-25 and over 65 (n = 1732, 28%). More than half were males (n = 3167, 59%). Nearly one-third of the sample was African American (n = 1899, 31%).

The majority of the sample was discharged to an

individual or family home (n = 3937, 65%). Thirteen percent (n = 781) were discharged to a different CSB than the admitting CSB. There was a small majority of rural persons (n = 3,204, 53%). The median length of stay in the hospital was 28 days, and thirty-four percent (n = 2048) had a length of stay of less than two weeks. One quarter of the admissions were voluntary (n = 1517, 25%). Approximately one-fourth of the discharges had a primary diagnosis of substance abuse (n = 1466, 24%). Twenty-eight percent (n = 1708) had a primary diagnosis of schizophrenia, and 22% (n = 1366) had a diagnosis of major depression.

As seen in Table 4, there were some differences in characteristics between the rural and the urban discharges. Although there were similar percentages of males in both groups, the rural group were somewhat older and had a smaller percentage of African Americans than did the urban group. Rural persons also had shorter median lengths of stay and more substance abuse disorders as a primary diagnosis. Persons discharged to rural areas were also less likely to have been voluntary admissions or to have a primary diagnosis of schizophrenia, and more likely to be discharged to an individual or family home than were urban persons.

Table 4

Means of Selected Predisposing, Enabling, and Need Characteristics of Rural and Urban Clients

Variable	Total = 6,093	Rural = 3,204	Urban = 2,889
AGERISK (high)	.284 (1,731)	.305 (979)	.261 (754)
GENDER (male)	.594 (3,167)	.607 (1,944)	.579 (1,674)
RACE (black)	.312 (1,899)	.269 (862)	.359 (1,037)
LIVING (home)	.646 (3,937)	.683 (2,189)	.605 (1,748)
CATCHMENT(diff)	.128 (781)	.115 (368)	.143 (413)
LOCATION (rur)	.526 (3204)	1.00	0
LOS (short)	.336 (2,048)	.392 (1,255)	.275 (794)
LEGAL (vol)	.249 (1,517)	.174 (557)	.332 (960)
SADX	.241 (1,466)	.283 (906)	.194 (560)
SCHIZ	.28 (1,708)	.241 (773)	.324 (935)
DEPRESS	.224 (1,366)	.182 (583)	.271 (784)
Note. Median age	38 years	40 years	37 years
Median LOS	28 days	23 days	32 days

Research Question #1: To what extent do the CSBs initiate and maintain linkages with clients who are discharged from state hospitals?

Results of Discharge Follow-up Survey

Results shown in Table 5 indicate that the CSBs documented a record for 83% of the discharges. Of this group, CSBs reported receiving notification of the discharge from the facility for 95%. CSB staff established contact with the patient during the hospitalization in 54% of the cases, and 80% of the discharges had some contact with the CSB following discharge. For 58% of these discharges, contact occurred while the patient was on pass awaiting discharge, or within 14 days after discharge. Seventy-eight percent of the cases eventually received face-to-face services from the CSBs after discharge and before any subsequent hospitalizations.

Table 5

Results of Continuity of Care Discharge Follow-up Survey

Variable	Total		Rural		Urban	
	n	Mean	n	Mean	n	Mean
DOCUMENT**	6093	.831	3204	.892	2889	.763
COMMUNICATE	4947	.953	2814	.958	2133	.947
IN-HOSP**	5008	.541	2826	.583	2182	.487
CSB CONTACT*	4881	.803	2732	.818	2149	.783
FF SERVICES*	4900	.778	2728	.794	2173	.759

Note. * $p < .05$
** $p < .01$

Results for Each Empirical Indicator

Contingency table analyses were used to examine the relationship of the survey results to the independent variables: predisposing factors (i.e., AGERISK, GENDER, RACE), enabling factors (i.e., LIVING, CATCHMENT, LOCATION), and need factors (i.e., LOS, LEGAL and primary diagnoses: SADX, SCHIZ and DEPRESS).

Documentation. There are relatively small differences between GENDER and RACE and AGERISK in the percentage of discharges for which a CSB record was not located.

All except one of the remaining variables are associated with the existence of documentation by a CSB

discharge record. The one variable not significantly associated with existence of a discharge record is DEPRESS, the primary diagnosis of major depression.

The association between SADX, substance abuse as primary diagnosis, and no documentation ($\chi^2(1) = 111.84$, $p < .001$) is significant. In addition, LOS ($\chi^2(1) = 187.62$, $p < .001$) reveals that discharges with a length of stay of less than two weeks were also less likely to have a CSB record of the discharge. Finally, the out-of-catchment discharges, which account for only 13% ($n = 781$) of the total sample, have a higher percentage of persons discharged without a record at the CSB than do the discharges admitted from and discharged to the same CSB ($\chi^2(1) = 215.22$, $p < .001$).

In summary, the primary empirical indicator for continuity of care, documentation of the existence of a record at the CSB, was examined. Factors associated with lack of documentation are: not living in own or family home, out-of-catchment placement, urban location, short LOS, voluntary admission, substance abuse diagnosis, and not having a diagnosis of schizophrenia.

Communication. Communication was the next indicator of continuity of care examined. For predisposing factors (AGERISK, GENDER, RACE), there are no significant findings for whether the CSB indicated they had received notification from the facility. However, differences for those

discharged to a different catchment area, CATCHMENT, ($\chi^2(1) = 12.6$, $p < .001$), and with shorter length of stays, LOS, ($\chi^2(1) = 33.3$, $p < .001$) are significant findings.

In-hospital contact. Factors associated with the indication of whether the CSB staff had in-hospital contact with the client were also examined with contingency tables. Findings were significant for GENDER, LIVING, CATCHMENT, LOCATION, LOS, LEGAL, AND SADX. Thus, groups with less communication tend to be males ($\chi^2(1) = 6.7$, $p < .05$), discharges to own or family home ($\chi^2(1) = 6.5$, $p < .05$), discharges to a different catchment area ($\chi^2(1) = 56.8$, $p < .001$), discharges to urban CSBs ($\chi^2(1) = 45.7$, $p < .001$), discharges with short lengths of stay ($\chi^2(1) = 154.7$, $p < .001$), voluntary admissions ($\chi^2(1) = 20.9$, $p < .001$), and substance abuse primary diagnoses ($\chi^2(1) = 71.4$, $p < .001$).

CSB contact after discharge and provision of services. Discharges who received no CSB contact after discharge and provision of services tended to be male ($\chi^2(1) = 61.28$, $p < .001$), discharged to a different catchment area as of admission ($\chi^2(1) = 23.76$, $p < .001$), short length of stays ($\chi^2(1) = 169.12$, $p < .001$), voluntary admission ($\chi^2(1) = 29.04$, $p < .001$), diagnosed with a substance abuse diagnosis ($\chi^2(1) = 241.63$, $p < .001$), not diagnosed with schizophrenia ($\chi^2(1) = 86.72$, $p < .001$), and not with a diagnosis of depression ($\chi^2(1) = 16.61$, $p < .001$). These are all

significant findings. Being discharged to a rural location is also significant at ($\chi^2(1) = 9.34$, $p < .05$).

The above findings respond to the study's first research question: **To what extent do the CSBs initiate and maintain linkages with clients who are discharged from state hospitals?** Results for each empirical indicator are given to show the extent to which CSBs have documentation, receive communication, provide in-hospital contact, have contact after discharge and provide CSB services.

Table 5 also shows the results of the findings specifically for the two groups of interest, rural and urban. There is a significant relationship between geographic setting and each dimension of continuity of care with the exception of communication. More persons discharged to rural areas received greater levels of continuity of care than urban areas, according to 4 of the 5 major indicators.

These findings do not support the study's first hypothesis: H1: Discharges to rural areas will receive lower levels of continuity of care than discharges to urban areas.

Some type of documentation of the hospitalization was found at the CSB for 89% of rural discharges, whereas only 76% of urban discharges had CSB documentation of the hospitalization ($\chi^2 = 178.41(1)$, $p < .001$). CSB staff

contact with the patient while hospitalized was significantly higher for rural discharges (χ^2 = 45.72(1), p <.001). Furthermore, the CSB provision of services (χ^2 = 9.34(1), p <.05), and the CSB provision of face-to-face services (χ^2 = 8.77(1), p <.05) are both significantly greater for rural discharges.

Why Services Were Discontinued

In addition to the findings from each of the 5 indicators just analyzed, a final survey question provides some interesting descriptive findings. The final survey question concerned why individual cases were closed at the CSB, if they had been closed at the time of the survey. If services had been discontinued for the particular discharge prior to the data collection and sometime after discharge, the CSB staff were asked to record reasons why services were discontinued. If services were discontinued, the primary reason (21%) was documented as "client terminating services against advice, with no referral." A large percentage of responses (23%), were in the "other" category, which included staff writing their own responses. For the most part, they wrote "client refused treatment." Somehow, the staff did not like the other choices. The responses are shown in Table 6.

Table 6

Reasons Services Were Discontinued

Transferred to Other Organization.	13%
Administratively Discontinued.	18%
Client Died.	4%
Client Terminated AMA; No Referral.	21%
Client Terminated AMA; Referral Made.	3%
Client Lost Contact.	8%
Discharged; Treatment Completed - No Referral	5%
Discharged; Treatment Completed - Additional Services Advised - No Referral	2%
Discharged; Treatment Completed - Additional Services Advised - No Referral	4%
Other	23%

Note. Weighted N = 1,130.

While this question could be improved to obtain better answers and less "write-ins," the number in the "administratively discontinued" category provide interesting data (18%). This is significant, if policies reflect knowledge of serious mental illness, this number should be quite small.

Research Question #2: Are there differences between discharges to rural and urban areas in the extent to which continuity of care is achieved?

The second research question addressed more extensively the relationship between continuity of care and the geographic setting (i.e., rural versus urban) to which the discharge was made.

CCARE Scores

The difference between rural and urban discharges was next examined using a composite measure of continuity of care (CCARE). CCARE was calculated based on the five dichotomous survey items used to assess the specific dimensions of continuity of care addressed by this study.

Possible CCARE scores ranged from 0 (none of the of elements of continuity of care were present) to 5 (all five elements of continuity of care were present). Thus, a discharge received a score of 5 when each of the following elements of continuity of care occurred: 1) a record of the discharge was located at the CSB; 2) the facility notified the CSB of the discharge; 3) the CSB had in-hospital contact with the client; 4) the CSB had contact with the client after discharge; and 5) the CSB provided face-to-face services after discharge. Possible scores are 0, 1, 2, 3, 4, and 5.

It is important to note that the results here are not normally distributed, as scores can range from 0 to 5. Thus, those cases without a 'yes' on the survey have a score of 0. Those with all five questions answered positively score 5 (n = 2046, 33.6%).

Analysis of Variance

A one-way analysis of variance (ANOVA) was conducted to determine if there was a significant difference between rural and urban discharges (i.e., geographic location) in

their levels of continuity of care. As shown in Table 7, the ANOVA reveals a significant difference between rural and urban discharges ($F(1,685) = 208.72$, $p < .01$), further supporting hypothesis, H1: Discharges to rural areas receive lower levels of continuity of care than those to urban areas.

Table 7

ANOVA: CCARE with Rural Location, Race, and Substance Abuse

Between Groups	SS	DF	F	p value
CSB location[a]	596.56	1	208.72	.000**
Race	12.30	1	4.30	.038*
SA Diagnosis	1021.12	1	357.27	.000**
Location by race	3.10	1	1.08	.298
Location by SA	34.31	1	12.00	.001**
Race by SA	.06	1	.02	.888
Location-race-SA	3.14	1	1.10	.294

Note. a Rural versus urban.
* $p < .05$
** $p < .01$

Substance abuse diagnosis. Discharges with a primary diagnosis of substance abuse (SA) received less continuity of care ($F(1,6085) = 357.27$, $p < .01$), thus supporting the third hypothesis, H3: Discharges who have diagnoses of substance-related disorders will receive lower levels of continuity of care.

There is a significant interaction effect for location by substance abuse diagnosis ($F(1, 6085) = 12.00$, $p < .01$). In other words, there is less continuity of care if diagnosis of substance abuse than if not, particularly in urban areas. The difference in CCARE scores between the rural and the urban discharges is greater for discharges with an SA primary diagnosis than for those without that diagnosis. The average CCARE scores for the rural and urban discharges categorized by race and substance-abuse diagnosis are presented in Table 8.

Table 8

CCARE Scores by Geographic Area, Race, and Substance Abuse Diagnosis

	Mean	SD	N
RURAL DISCHARGES			
White and Non-SA	3.92	1.51	1,627
White and SA	2.95	1.69	715
Black and Non-SA	3.80	1.48	671
Black and SA	2.96	1.51	191
URBAN DISCHARGES			
White and Non-SA	3.28	1.78	1,458
White and SA	2.02	1.91	395
Black and Non-SA	3.15	1.88	872
Black and SA	1.79	1.89	165
Entire sample	3.32	1.78	6,094

Note. Scores range from 0 (no continuity of care) to 5 (all 5 indicators scored with "yes")

Race. There is a main effect difference in continuity of care due to race, but not due to the interaction of race with either location or substance-abuse primary diagnosis. Persons discharged with a substance-abuse diagnosis in the

rural areas had about the same average level of continuity of care regardless of race (White = 2.95; Black = 2.96). However, discharges with a substance-abuse diagnosis who are African American in urban areas have a significantly lower average score (1.79), thus supporting the second hypothesis H2: Discharges who are African American will receive lower levels of continuity of care.

Research Question #3: How do predisposing, enabling and need factors affect continuity of care?

The results of the survey were examined with logistic regression to determine which types of clients were more likely to become lost to the system of services, that is, not to receive continuous care according to their individual scores for the survey.

Multivariate Analyses

Multivariate logistic regression was used to study the simultaneous influence of several predictors on the dependent variable: continuity of care. The data are explored to determine the influence of other independent variables. Table 9 shows results of logistic analysis.

Table 9

Logistic Regression of Predictors of Continuity of Care for Discharged Patients

Variable	Beta[a]	Odds Ratio	+SE	95% C.I.E.
Predisposing factors				
AGERISK	-0.15	**0.86***	0.07	(0.75, 0.99)
RACE (Black)	-0.43	**0.65****	0.07	(0.56, 0.75)
GENDER (male)	-0.12	0.89	0.07	(0.78, 1.01)
Enabling factors				
LIVING	-0.13	0.88	0.07	(0.76, 1.01)
CATCHMENT (diff)	-1.16	**0.31****	0.12	(0.25, 0.39)
LOCATION (rural)	0.73	**2.07****	0.07	(1.81, 2.37)
Need factors				
LOS (short)	-1.03	**0.36****	0.08	(0.30, 0.42)
LEGAL	-0.09	0.91	0.08	(0.78, 1.06)
SADX	-0.61	**0.54****	0.10	(0.44, 0.67)
SCHIZ	0.68	**1.98****	0.09	(1.66, 2.36)
DEPRESS	0.20	**1.22***	0.09	(1.02, 1.47)
Goodness of Fit				

(n = 4,930.) Goodness-of-Fit Statistic = 4914.752; df = 12, 4918; p = .001.

Note. Significant odds ratios are in bold type.
[a]Standardized Beta.
* $p < .05$
** $p < .01$

The logistic regression results show that a person discharged from a state hospital to a rural CSB in FY 1992 is twice (OR = 2.07, 95% CIE: 1.81, 2.37) as likely to have continuity of care when compared to a person discharged to a CSB classified as urban. This finding does not support the hypothesis: H1: Discharges to rural areas will receive lower levels of continuity of care than discharges to urban areas.

Other results for the predisposing factor AGERISK (OR = .86, 95% CIE: .75, .99), show that age has a significant association with continuity of care. Those discharges in the high-risk age group (18-25 years or over 65 years) were less likely to receive continuity of care. As for RACE, persons who were Black had 35% less likelihood (OR = .65, 95% CIE: .56, .75) of receiving continuity of care than that for persons who were White. In terms of enabling factors, discharges to a different catchment area were 69% less likely to have continuity of care (OR = .31; 95% CIE: .25, .39). This finding supports the hypothesis, H4: Discharges who are discharged to different catchment areas than the admission catchment area will receive less continuity of care.

Of the need factors associated with continuity of care, discharges who had a length of stay less than two weeks were 64% less likely to have continuity of care (OR = .36, 95% CIE: .30, .42) than those individuals who were

hospitalized longer. In addition, a primary diagnosis of substance abuse is a strong predictor of low continuity of care (OR = .54, 95% CIE: .44, .67).

Significant predictors of high continuity of care are: primary diagnosis of schizophrenia (OR = 1.98, 95% CIE: 1.66, 2.36), and primary diagnosis of major depression (OR = 1.22, 95% CIE: 1.02, 1.47).

In summary, this chapter presented the findings from the study in the order of the three research questions, with descriptive findings, contingency analyses, analysis of variance and logistic regression findings.

For the first research question, the results of the survey reveal that documentation of the discharge existed for 83% of the sample. This means that 17% of the discharges were not accounted for by the CSB community programs, despite the state policy which states that CSBs are responsible for post-hospital services for all discharges. Moreover, a small percentage of the initial sample was not included in the study because of logistical problems in merging the data sets and for those surveys which were sent to the wrong CSB and never completed. Thus, in reality the number may even be slightly larger than 17%, and should present a quandary to policy makers, program planners, and administrators.

The second research question explored the differences

between rural and urban discharges. In terms of generalizability of the two groups of interest, urban and rural demographic characteristics show some differences in several variables. For example, rural discharges tended to be somewhat older, more likely to be White, and more likely to have diagnoses of substance-related disorders than did the urban discharges.

The differences between rural and urban discharges were also examined using a composite measure of continuity of care (CCARE). CCARE was calculated based on the five survey items which indicated continuity of care as defined in this study.

Analysis of variance indicates that discharges to rural areas received significantly greater continuity of care ($Z = 6.54$, $p < .01$) than those to urban areas did. The mean CCARE scores for the rural and urban samples was 3.62 and 2.69, respectively. The study found that rural discharges received greater levels of continuity of care, despite the fact that rural discharges reflected higher proportions of discharges with some descriptive characteristics associated with lower levels of continuity of care (i.e., primary diagnosis of substance abuse, shorter length of stays).

Multivariate analyses were then used to study the dependent variable: continuity of care. Findings show that certain predisposing, enabling, and need factors directly

affect continuity of care. Results of the logistic regression analysis showed that continuity of care is associated with (among others) being discharged to a rural area and having a primary diagnosis of schizophrenia. The chapter ended with a description of characteristics of discharged patients who receive continuity of care. The next chapter discusses the implications of these findings from policy, theoretical and clinical perspectives and offers suggestions for future research.

Chapter 6. Discussion and Conclusion

The purpose of this study was to explore factors that influence or impede continuity of care for patients leaving state psychiatric hospitals and re-entering the community based on a Conceptual-Theoretical-Empirical (CTE) Continuity of Care Model. This chapter presents a summary of the research and a discussion of the findings obtained. Policy implications, theoretical implications, and conclusions are presented after limitations are identified. In conclusion, suggestions for future research are proposed.

The research questions addressed in this study were:

1. To what extent do the community services boards (CSBs) initiate and maintain linkages with clients who are discharged from state hospitals?

2. Are there differences between discharges to rural and urban areas in the extent to which continuity of care is achieved?

3. What client and service characteristics are related to continuity of care?

These questions are of interest because they may help explain what types of patients need greater assistance in the transition process between hospital and community.

Hospitalization is no longer considered separate from community care and state mental health policy directs the community services boards (CSBs) to be responsible for continuity of care. However, the state hospitals are organizationally distinct entities and are separated from the communities in accountability, budgets and operations. Thus, discharges to the community may not remain connected to the community program as desired.

Summary of Findings

The objective of this research was to identify determinants of continuity of care for persons who are discharged from state psychiatric facilities to the community mental health system in Virginia. This was done through an empirical examination of discharge follow-up for all CSBs and a sample of discharges for the fiscal year 1992.

Demographics

Consistent with national trends, Virginia's population is aging. The number of people who are 65+ years old is expected to increase by 14.2% during the 1990s. For Virginia, the median age is 30 years of age (1990) and expected to be 37 years of age by 2000. The median age for this sample was 38 years.

The client characteristics reveal the sample had small majorities of rural persons (n = 3,204, 53%) and of males (n

= 3167, 59%).

Nearly one-third of the sample was African American (n = 1899, 31%), which is significant, since the current figure for ethnic and racial minorities in Virginia is thought to be somewhere between 21% and 24% of the state population.

The median length of stay in the hospital for the sample was 28 days, and thirty-four percent (n = 2048) had a length of stay in the hospital of less than two weeks. A small percentage were first admissions (n = 765, 13%), and one-quarter were voluntary admissions (n = 1517, 25%).

Approximately one-fourth of the discharges had a primary diagnosis of substance abuse (n = 1466, 24%) and 13% were discharged to a different CSB than the admitting CSB. The majority of the sample were discharged to an individual or family home (n = 3937, 65%).

Theoretical Perspective

The theoretical perspective employed in this study is the Continuity of Care CTE based on the philosophy of the Community Support System (Stroul, 1989) and the concepts of vulnerability presented by Aday (1993). This continuity of care conceptual model posits that in order for persons with serious mental illness to be integrated into community services, the care between hospital and community has to be continuous and coordinated. Knowing more about the characteristics of clients who leave state psychiatric

facilities, during the transition time of vulnerability, may help planners draw up programs that fit the individual rather than those that are convenient to the program.

The unit of analysis in this study was the discharge. Study hypotheses were derived from the Continuity of Care CTE. The third research question asks which client and service characteristics are determinants of continuity of care. It was hypothesized that discharges who were African American would receive less continuous care. It was hypothesized that discharges to a rural area would receive less continuous care. It was also hypothesized that discharge with substance-related disorders and discharge to a different CSB would negatively impact continuity of care.

The research questions were examined empirically by using survey data collected from the Discharge Followup Survey combined with client demographic and service data from the Department of Mental Health, Mental Retardation and Substance Abuse Service (DMHMRSAS). Exploratory analyses using contingency tables, analysis of variance, and logistic regression were performed on the data.

Research Question #1: To what extent do the CSBs initiate and maintain linkages with clients who are discharged from state hospitals?

Several conclusions can be drawn from the results of this study that have implications for policy and program

development. For the first question, the conclusions relate to the different CSBs and how they implement a state-wide discharge planning philosophy and their own discharge planning process. Since follow-up and tracking of discharges seem to be the major dimensions of this discharge process, these will be addressed here. Unless the CSB has a record, or some type of documentation that the client was even discharged from the hospital facility, other empirical indicators of continuity of care are nonexistent. These other empirical indicators include other administrative dimensions of continuity of care: communication between hospital and community, CSB staff contact with the client while the client is in the hospital and CSB staff contact with the client after discharge, and provision of services.

A discussion of the high risk groups and the policy implications of the findings of this study will be presented next according to the empirical indicators and research questions described above.

Documentation of Client Record

Current state mental health policy as operationalized in the Client Services Management Guidelines (1988) requires that all hospitalized clients be assigned to a CSB for purposes of discharge planning. In addition, the guidelines call on CSBs to maintain active case records of all hospitalized clients. Results of this study show that

despite these guidelines, the CSBs did not have records for a large percentage (17%) of the discharges to their respective catchment areas in FY 1992.

The percentage of discharges with no record at the CSB highlights the patient's vulnerability inherent in the transfer of care across physical settings. The number of discharges from state facilities for which the CSB has no record of the hospitalization raises concern about inadequate record keeping at the CSB, which could account for failure to locate a record for a given client. If, on the other hand, record keeping is adequate, then the absence of a record may indicate that the CSB had no documentation of any participation in that particular hospitalization, despite state policy directing otherwise.

The state facilities use a patient's discharge mailing address to determine the discharge CSB in their automated reimbursement system. The patient's discharge address may be inaccurate (e.g., for patients who move immediately or often after discharge) or inappropriate (e.g., when patients were discharged to local/regional substance abuse centers or when the CSB is in the same town as the state facility). For example, when the patient has been discharged to a regional substance abuse center, the mailing address may incorrectly identify the local CSB as responsible, rather than the CSB which will ultimately provide community

services. This documentation problem clearly could affect not only the results of the study, but the day-to-day tracking of discharges. CSBs claim they cannot be held accountable when they have no record, if in fact the facility did not notify them of the hospitalization.

Communication

Current guidelines require that CSBs maintain active case files on all clients who are hospitalized from their areas. The close involvement of the CSB in discharge planning is not evident if, for 17% of this study's sample, no record of the hospitalization was ever located at the CSB. Examination of those discharges with records at the CSBs reveals that the facility did notify the CSB of the discharge in 95% of these cases. The process by which CSBs are notified of the patient's discharge consists of documentation of a transfer of paper or of telephone calls from facility staff to CSB staff. Such communications would be documented in the client chart.

Some research has shown that increasing rates of admissions and readmissions to state hospitals are coupled with decreasing lengths of stay (Wan & Ozcan, 1991). This trend suggests increased pressure on the staff as they try to keep documentation up to date. The phenomenon may also significantly affect the ability of local community staff to adhere to guidelines last revised in 1988.

The record keeping and tracking challenges pose problems in evaluating administrative linkages between state psychiatric facilities and CSBs. This area of communication must be improved in order to make accurate conclusions regarding whether continuity of care has been achieved. Improving the data elements in each facility and for the CSB automated reimbursement system (ARS), especially in the area of identifying discharge CSB, could greatly aid research and clinical efforts. Furthermore, confusion about which CSB is responsible for services would most likely contribute to the high percentage of clients who are not connected to the CSB after discharge.

In-hospital Contact

This area deals with whether the CSB staff had contact with the individual while the person was hospitalized. While the Client Services Management Guidelines state that each hospitalized client shall be given the opportunity to meet with his/her case manager (or equivalent) prior to discharge, the data indicate that these meetings occur in the hospital about half the time.

Most striking is the finding that rural discharges received a higher rate of CSB contact while in the hospital than their urban counterparts. Although geographic distances between the CSBs and state facilities are generally greater for rural areas, rural CSB staff contact

was higher. One possible explanation for this is a differences in organizational structure for urban and rural CSBs, or for CSBs that primarily admit to one particular hospital. Furthermore, hospital characteristics, data not available in this study, could be different enough to have an impact on this empirical indicator of continuity of care.

One example of a regional difference involves an area of the state which developed a position of community liaison with the goal to improve the transition between hospital and community. In this scenario, the case manager is hired by the CSB, but housed and supervised by a hospital supervisor of the community liaison team. One complicating factor related to this difference in organizational structure is that the CSB staff completing the survey may have answered "no" to in-hospital contact if they did not consider this person a CSB staff member. While this may accurately capture what continuity of care is trying to reflect, it requires a closer look and may be a limitation in this particular indicator of continuity of care.

The nature and amount of in-hospital contact between the CSB case manager and the client needs to be explored for a fuller understanding of this crucial variable. Other related issues that should be addressed in looking at the nature of these contacts would include: the CSB size, geographic location (i.e., proximity of the CSB to the state

facility), CSB budget for liaison activities, number and type of professional staff involved in liaison activities between the CSB and the client, and the written agreements between the CSB and the facility. Such information might greatly increase the understanding of those factors that are important in determining the value of the in-hospital contact to client outcomes.

There are several other concerns related to the amount and nature of in-hospital contact. For example, since the survey question asked for documentation of contact either while in the hospital or in the community, there may have been some confusion about how to respond to the survey for clients who had contact while on pass. Some CSB staff may have responded that no in-hospital contact occurred if the contact did not take place on the hospital grounds.

The philosophy that discharge planning begins at admission, and that the CSB is responsible for maintaining an active case while the client is hospitalized, supports the principle that the event of hospitalization is part of the community treatment process, not removed from that process. Therefore, if CSB staff view hospitalization as a treatment modality selected for the client during an acute phase of the illness, the term "aftercare" should be viewed as out-dated, as it has lost meaning. Furthermore, if the CSB is responsible for maintaining an active case file on

all clients who are hospitalized (and 83% of the discharges were actually readmissions), then the term "aftercare" does not make sense.

A significant part of service delivery is related to continuous services. Continuity of care, rather than "aftercare", becomes the goal more congruent with current philosophies of service delivery, and "aftercare" no longer applies to community care.

Common goals set by community programs currently involve both decreasing the rate of admissions and decreasing lengths of stay, which may contribute to the ability of communities to effectively and actively participate in discharge planning for those clients who are hospitalized for less than 2 weeks. When a client is hospitalized in a state facility, the CSB may participate in liaison activities without direct contact with the client. Not enough is known about the value of in-hospital contacts in general and more specifically, how in-hospital contact might contribute to client outcomes such as community adjustment, community tenure and quality of life.

Further research is required which could adequately and comprehensively measure continuity of care. For example, an instrument could be developed which could examine the individual service plans for congruence between facility and CSB goals upon admission and at discharge. In addition, the

state policy guidelines should be improved with better specification of role requirements. For example, the guidelines should clearly state who (facility or CSB) is responsible for providing continuity of care and how that is to be implemented.

Some clients are not seen by their case manager while in the hospital. While this in-hospital contact is a basic policy, requiring CSB staff to have direct contact with clients while hospitalized may not be realistic. Clients with shorter lengths of stay (less than 2 weeks) were shown to have poor in-hospital contact. In fact, with shorter lengths of stay and the need for case managers to both link clients to services as well as create resources in many communities, the use of community passes may be a phenomenon worth examining. Ensuring that the individual remain connected to the case manager and the community even while hospitalized would be more congruent with the Community Support System philosophy of flexible and individualized services. Programmatically sending a community case manager to the hospital when so many other clients in the community need attention may not be efficient. The legal guidelines would need to be determined. Philosophically, having the patient return weekly to the community, the community program and the case manager would support client connectedness to the community and decrease hospital dependency.

CSB Contact and Provision of Services

Guidelines state that the discharge plan must include an appointment with a CSB program representative scheduled within a week of the discharge. The findings indicate that 24% of the discharges meet the guidelines of having contact within the first week of discharge.

Examination of the characteristics associated with CSB services reveals that males, discharges to a different catchment area, urban, shorter lengths of stay, voluntary admissions and substance abuse as primary diagnosis are higher risk for not receiving CSB services. These groups are at-risk, and thus are candidates for more intensive prevention efforts. Without connection to CSB services, patients discharged might be less likely to adhere with discharge plans, especially those requiring intensive medical and nursing monitoring such as medication maintenance. These chances for non-adherence increase the likelihood of subsequent readmission and increased resource utilization.

Finally there is a high rate of client "termination" from services. Combined with the findings which show a high readmission rate, a high rate of client termination from services might indicate programs are either not developed or available for this population. A population which includes a high number of persons diagnosed with a serious and

persistent mental illness, implies a need for redirection and focus in program development. There is a clear need for substance abuse follow-up programs.

Questions need to be answered such as: Do the programs fit the needs of the population? In addition, the high rate of not locating discharges has direct impact on guidelines which speak to outreach and case management. The high number of discharges with no record (17%) and without CSB contact while hospitalized (46%) raises questions about the characteristics of high-risk groups.

High-Risk Client Groups

There are some client groups that seem to be at greater risk of not receiving continuous care, as indicated by lack of a record, lack of CSB contact during hospitalization and lack of involvement in CSB services following discharge.

These "high risk" groups include patients who:

- are males
- are African American
- are admitted from one CSB and discharged to a different CSB
- are discharged to urban CSBs
- have shorter lengths of stay
- are voluntary admissions
- have a primary diagnosis of substance abuse
- are combinations of the above characteristics

While specific programs could address the different variables involved, discharges who were voluntary admissions are somewhat unique. This group may benefit from prevention and educations efforts as well as increase development and

use of alternative treatment options in the community. Since there is economic and clinical concern for individuals who go in and out of the hospital frequently, those who go back into the hospital soon after discharge are high risk for utilizing a disproportionate amount of resources. The client who is a voluntary admission requires special attention since they may be overlooked, having not developed a history as such a recidivist.

In summary, this research question finds new information about several aspects of continuity of care that can be used for planning purposes and policy decisions. In general, the study provides a baseline of information about the extent to which continuity of care is provided to persons discharged from Virginia's state psychiatric hospitals and some of the client and service characteristics related to achieving continuity of care.

The findings from this study reveal that certain basic procedures have not been uniformly implemented consistent with the current Client Services Management Guidelines. The percentage of discharges for which the CSB had no record of the hospitalization and the significantly high number of discharges who did not receive CSB contact while hospitalized raises serious questions about the discharge planning process in general, and about methodologies used to study this phenomenon.

Research Question #2: Are there differences between discharges to rural and urban areas in the extent to which continuity of care is achieved?

Rural and Urban Differences

Perhaps one of the most interesting findings was that persons discharged to rural areas received greater levels of continuity of care based on analysis of variance of the composite CCARE score. To explain this, one might expect that discharges to rural areas are more likely to reflect those individual characteristics associated with greater continuity of care; however, just the opposite was true. In fact, rural discharges included higher proportions of discharges with characteristics associated with lower levels of continuity of care. The rural persons in this study included greater proportions of patients who had a primary diagnosis of substance abuse, were involuntary admissions, and had shorter lengths of stay.

Another possible explanation is that hospital discharges to rural areas occur less frequently and, as a result of being a "rare" event, are the focus of greater attention. However, in this study there were an average of 139 discharges to rural CSBs and 170 discharges to urban CSBs. A difference of 31 discharges over the course of 12 months does not appear to be large enough to support this explanation. Further research is needed to explain the

differences in continuity of care between rural and urban discharges.

Another theory related to this finding is based on the application of ruralness as a psychological concept. Melton (1983) defined ruralness not only on the basis of attitudes and values but further postulated a manning theory which refers to the "deviation from homeostasis between setting and the number of persons in the setting" (p.7). Rural areas tend to be undermanned, both in the population and the professional groups. Barker (1960) had hypothesized that each setting has an optimal number of inhabitants. Too many occupants creates specialization. With less staff and less staff specialization in rural areas, more staff may be available to carry out whatever task is required to assist discharged patient back into the community living. Understanding perceived notions and practices of community support staff in both rural and urban populations could enhance future studies.

Also striking is the finding that persons discharged to rural areas received a higher rate of CSB contact while in the hospital than their urban counterparts. Although geographic distances between the CSBs and state psychiatric facilities are generally greater for rural areas, the rural CSB staff contact was higher. One possible explanation for this may be a difference in organizational structure for

several urban CSBs. These are generally more urban and utilize a hospital employee as the CSB liaison for discharge planning with their clients. In some cases, CSBs with a hospital-employed liaison reported that the CSB did not have in-hospital contact with the patient since this contact was provided by the liaison. This resulted in a lower score for continuity of care for these CSBs.

This finding has implications for policy and planning as well as future study. Despite the goal for care to be continuous, it may or may not be important for the staff person to be consistent. Having a consistent treatment plan and a consistent CSB or program may be the continuous factor for some patients. Others may desire or require that the relationship with the case manager be the continuous link.

Analysis of variance (ANOVA), distinguished between discharges with or without a primary diagnosis of substance abuse and the interaction of diagnosis with geographic location. As noted above, discharges with this diagnosis received lower scores on CCARE. Additionally, the difference in continuity of care between rural and urban persons was greater for those with a substance abuse diagnosis. It appears that persons who have a primary diagnosis of substance abuse and are discharged to urban areas are at particularly high risk of becoming lost to services.

Research Question #3: How do predisposing, enabling and need factors affect continuity of care?

Predisposing, Enabling, and Need Factors

The results of the analysis of this question indicate that some types of clients are at greater risk of not receiving continuous care when discharged from state psychiatric hospitals to the community. Based on logistic regression analysis, the characteristics of these discharges include those patients who: 1) are in the high risk age group 2) are African American 3) are admitted from one CSB and discharged to a different CSB, 4) are discharged to a urban CSB, 5) have shorter lengths of stay (i.e., less than 2 weeks) 6) have a primary diagnosis of substance abuse.

High risk age group. This group includes the segments of the population thought to have the most difficulty accessing general health and mental health services. The young adult population and the elderly population are vulnerable groups in that respect.

African Americans. The study examined the effect of race on continuity of care. Individuals who are Black may connect less to community services than those who are White for several reasons. Match between client and provider is one area of recent study. Blank and his colleagues (1994) postulated that the racial match between client and case manager is a meaningful and often overlooked concept in

providing rural mental health services. The results indicate that African American clients who are diagnosed with substance abuse are at risk for discontinuous care regardless of geographic location which makes this an area of major programmatic concern.

The philosophy of the community support program states that "services should be racially and culturally appropriate" (Stroul, 1989, p.12). In this way, programs in all communities are asked to think about and implement programs that are available, accessible and also appropriate to members of racial and ethnic minority groups and women. While cultural diversity and cultural sensitivity have become buzzwords for organizations in general, a closer look at actual reasons for this disproportion is warranted based on the study findings.

Different catchment areas. Clients discharged to a different catchment area CSB from the original are at high risk for becoming lost to services. Since the annual number is relatively small, the discharge planning efforts can certainly be intensified for this group. This would require hospital staff awareness and effort. Another guiding principle of CSS is as follows: "Services should be normalized and incorporate natural supports" (Stroul, 1988, p.12). As such, programs are encouraged to offer services that integrate normal living, learning, working and leisure

activities in the community. Persons discharged to a new area of the state are in greater need of this encouragement by the CSB staff. Education about the community's resources are necessary before one can access those same services (e.g., parks, bowling, plays, buses, churches, business). Just like the "welcome wagon" introduces new families to a neighborhood, CSBs might improve their efforts to incorporate natural supports into the plan.

Urban. Logistic regression provided support for the finding that being discharged to an urban area is a risk factor for discontinuity of care (i.e., becoming lost to services) independent of other factors.

Shorter lengths of stay. Hospitals and communities still operate on long term stay model and philosophy for mental health intervention. The states' budgets generally still reflect the longer term treatment modalities (e.g., hospitalization), and dollars have not followed the patient (Provan & Milward, 1994). For example, in Virginia, the state facilities are still directly operated and financed by the state mental health authority receiving funding from the General Assembly while communities are semi-autonomous local bodies held only partially accountable to the state. Though communities account for the greater proportion of cases, they receive less funding than the inpatient facilities.

Inpatient teams might also need to revamp their

standard operating procedures to quickly prepare discharges in ways which are more efficient and have better quality. Likewise communities need to be creative in how they track discharges from state facilities and how communication between settings can benefit the quicker discharge process.

Substance abuse diagnosis. Being discharged with a primary diagnosis of substance abuse is also a risk factor for low continuity of care as also found in previous studies (Booth, Yates, Petty & Brown, 1991; Moos & Moos, 1995). While it is not known what secondary diagnoses were operative in the study sample, there is more severe morbidity associated with dual substance abuse and psychiatric problems (Ries, 1993; McKelvy, Kane & Kellison, 1987). Someone discharged from a state psychiatric facility with a diagnosis of substance abuse requires careful follow-up due to the chronic and debilitating nature of the substance-related diseases (Ries, 1993).

In summary, the determinants for continuity of care were examined by this research and implications presented. However, findings are not complete without a discussion of some of the limitations of such a study. This discussion follows and will be followed by the conclusions and suggestions for future research.

Limitations of the Study

One limitation of the study involves the difficulty of

generalizing findings, since only discharges in Virginia were considered. Future research in this area should consider using regional or national data in order to expand the scope of the study and also to compare the situation in Virginia with that in other areas of the country. However, state data bases vary tremendously in their definitions and the scope of data they collect. Until state-to-state comparability is improved, large state studies such as this provide useful information to other states in addition to Virginia.

In evaluating these findings, the method for determining rural and urban discharges must be considered. While consistent with the state mental health authority definition, it is relatively crude. Many CSBs in the state serve a multi-jurisdictional area, therefore a particular CSB may be more rural or more urban than another. Future research efforts should include ability to determine individual location through zip code or other more specific method. With a better measure capturing ruralness, the concept of geographic location could be described as a continuum. Variations include not only population density, but also population structure (e.g., age and sex distribution), and also population composition (e.g., marital status, income, ethnicity, education, and occupation, etc.).

A procedural limitation of the study is the difficulty identifying unique client identifiers between large secondary data sets. Other states have also reported this difficulty (Kamis-Gould, Hadley, Lovelace & Snyder, 1995). With no unique client identifier, information on duplication was unavailable. This study merged data sets based on facility number and register number of the client.

A fourth limitation is related to the available information in the data files. Many items noted in the literature do not get routinely collected. The result is that potential explanatory variables were not included in the analysis. For instance, with more expansive data in the DMHMRSAS's ARS, future research could consider CSB and community characteristics in the model.

As for individual level variables not available, a limitation of the diagnosis variable is that it provides only primary diagnosis information. Information on secondary diagnosis could provide more specific conclusions about the impact of comorbidity. Some authors report (Kivlahan, Heiman, Wright, Mundt & Shupe, 1991; Bachrach, 1986) the alarming prevalence and troubling clinical implications of substance-related disorders among the adult seriously mentally ill.

Potential dependent variables in the model, but not in the study, include indicators for quality of life,

satisfaction with care and utilization rates for specific services. The available data sources did not include information on the level of services. Likewise, no information on the quality of community mental health services (including patient satisfaction) was available to be included in this study, but are important areas for future study.

A final limitation involves data analysis with a highly skewed outcome variable, which may not be as sensitive a measure of continuity of care as would be desirable. Although more health services research recognizes that skewed outcome variables may actually be more expected than normal distributions, greater stringency in meeting the continuity of care criteria could decrease the skewness and aid future data analysis.

Conclusions and Policy Implications

Major community service growth has occurred during the 1980s as numbers of clients served by CSBs increased (Davis, 1991). Between 1988 to 1990, case management services alone increased in numbers of clients by 32% (Davis, 1991). Major initiatives from legislative funding has sparked this trend in community-based care. Findings of this study serve to alert mental health policy makers and planners that certain groups of individuals may be more vulnerable to becoming lost to services during the transition between service

settings.

The conceptual-empirical-theoretical (CTE) structure for this study, the Continuity of Care CTE is partially based on the vulnerability aspect of Aday and Andersen's model of access to medical care, which places health policy at the top. The state mental health care policy for discharged psychiatric patients is provided in the Client Services Management Guidelines (1988) which places the responsibility for community services on the community services boards (CSBs). However, findings of this study have implications at both state and local (CSB) levels.

State Policy Implications

The state psychiatric facilities are directly operated by the state mental health authority, Virginia Department of Mental Health, Mental Retardation and Substance Services (DMHMRSAS), while the CSBs are semi-autonomous entities with local and state funding. This separateness lends itself to potential difficulties with communication and authority. Although the policy indicates the CSBs are responsible for patients, the CSBs must get notification from any state facility upon admission of one of their patients from the community. A patient could be admitted to one facility and discharged within several days or weeks with new medications and new discoveries about diagnosis and treatment. However, unless the CSB staff are also aware of these clinical

decisions, continuity of care is lost. When state policy is revised, newer ways of communicating should be considered. With advances in technology, outmoded methods of notification should be eliminated and newer, more efficient mechanisms employed. Advances in technology have limitations in terms of confidentiality, therefore, state policy revisions require a variety of perspectives based on the complexity of stakeholders and decision-makers. However, balancing confidentiality with improved mechanisms for communication could provide one answer to the need for continuous treatment plans across settings.

Location. Continuity of care was found to be related to a variety of patient and service characteristics, and whether the patient was discharged to a rural or an urban setting. In addition, this research has implications for state policy regarding definitions of rural. The rural CSBs may achieve continuity of care, based on the definition in this study, more than urban CSBs because rural CSBs have stronger local policies for connecting to discharges. This is not known from the available data, however, sociological work has suggested that rural CSBs connect with clients on a different level than urban clinicians do with their clients (DeLeon, Wakefield, Schultz,& VandenBos, 1989). Recognizing the difficulties in access, such as transportation barriers, rural CSBs may be enhancing access through a variety of

mechanisms such as special vans, buses, taxis, private automobiles and volunteers in a way not perceived to be needed or used in urban areas, yet which facilitate continuity.

Knowledge of those factors associated with the level of continuity of care received by various sub-populations may provide indications of ways to ensure a smooth transition between the hospital and the community. In addition, programs serving patients who are at greater risk of not receiving continuous care should evaluate the procedures they use to facilitate this transition. Additional studies identifying both the barriers to continuity of care and successful ingredients of programs that achieve better continuity of care will be critical to obtaining a more complete understanding of continuity and improving services.

Continuity of Care CTE

The continuity of care CTE is based on conceptual elements of the CSS and of vulnerability. The Community Support System philosophy (from Figure 1) guides the states to provide services in certain ways which should improve coordination and continuity. The CSS model was developed in response to the realities of community-based care after implementation of deinstitutionalization. This model was originally developed to encourage mentally disabled persons to remain in the communities for some of the same

care that institutions once provided.

In defining and implementing the CSS model, states were left to decide who should provide and how to provide the basic, yet comprehensive services described. Case management was a new methodology for delivering services that did not necessarily include, although often did, nursing (Kanter, 1989). Case management was more than a response to a dysfunctional system (Anthony, Cohen, Farkas, 1988; Goering, Wasylenki, Farkas, Lancee, & Ballantyne, 1988).

With the advent of case management, the role that nursing played in the hospital with the seriously mentally ill was not addressed. Although nurses are instrumental in each of the CSS components in varying degrees, the community concept lacked ways to establish a nursing presence for each client. Thus, it is currently possible for a mentally disabled patient, who once would have access to nurses 24 hours a day, (e.g., in institutions) to have no contact with a registered nurse in any way. Community mental health professionals come from a variety of disciplines including nursing, but also are bachelors's prepared mental health workers, social workers, psychologists and psychiatrists.

One policy implication from the state level would involve a dramatic change from current operating procedures. Patients are currently required to have nursing care plans

and nursing discharge plans if they are hospitalized. Thus, the nurse discharging the patient now sends pertinent discharge information to the CSB, without regard for role or function of the person receiving the information. Exchange of information from nurse to nurse provides a more ideal model of transfer of care. Care plans should address all relevant aspects of the Community Support System. Policies should be implemented to assure oversight if not provision of services by nursing.

Psychiatric mental health nursing has historically spanned the boundaries across clinical settings to deliver and communicate about patient care. Caverly (1991) challenges psychosocial nurses to become the "bridge needed by consumers of mental health services" (p. 28). Nursing school curricula have long organized around both the acute and chronic phases of human responses to conditions. Implementation of practice guidelines to span the boundaries fits with movements toward managed care and mental health care reform.

Continuity of care has long been a concern of nursing (Straub & Parker, 1966) and expresses the link nursing has made to follow vulnerable populations from setting to setting in such areas as geriatrics (Naylor, 1990), oncology nursing (Case & Jones, 1989), and in a variety of advanced practice roles (Jowett & Armitage, 1988). This should be

carried through to mental health as well.

The vulnerability model (from Figure 2) suggests certain groups of persons are vulnerable to discontinuous care, and have more barriers to access and utilization as well as differences in satisfaction. Policies can be made based on the findings of this study.

Recommendations

From the analysis of the data in this study, several recommendations for state policy can be made. These are outlined as both specific and general recommendations and questions for further study:

Recommendation #1: Review the mechanisms by which transfer of nursing care plans and integrated care plans occur. If only the integrated plans and not the nursing care plans are transferred from the inpatient facility to the community nurse, continuity of care is difficult to achieve. Mandate not only the transfer, but continued oversight by a registered nurse. Sufficient findings should be provided from the function to be performed.

Recommendation #2: Examine the categories currently used by CSBs to document why services are discontinued. In particular, the use of the "administratively discontinued" category has potential to be outdated and incongruent with discharge planning philosophy. Mandate the ongoing active care planning for all persons discharged from inpatient

facilities. Implement strict case review for any individuals discontinued from community care.

Recommendation #3: Revise the Client Services Management Guidelines regarding policies for CSB staff to provide in-hospital contact. Determine which clients might benefit most from this intensive modality and individualize treatment plans accordingly.

Recommendation #4: Mandate more intensive discharge planning for patients with a primary diagnosis of substance abuse. With less in-hospital contact and less initiation of face-to-face CSB services, this population is at risk for being "lost" to services.

Recommendation #5: Develop regional and local training programs to increase understanding of issues related to vulnerability. Focus on discharge planning for vulnerable groups during transition periods.

Local Policy Implications

The CSBs need to know the clinical and service characteristics of the discharges from inpatient facilities that they will receive. To provide service programs that fit, knowledge of these demographic data will aid planning and implementation of programs. Knowing characteristics of discharges that are potentially high risk individuals can facilitate better models of care.

Models of community care. This study found that there

is a difference in the level of continuity of care achieved for some types of discharges. Transitional community programs might contribute to better outcomes for some substance abuse patients. While patients with schizophrenia or major depression may now be discharged with psychotropic medications and given enough to last several weeks, the substance-abusing client is often discharged to behavioral treatments. This makes the transition from inpatient particularly challenging for them, their significant others and their mental health workers. Since denial is the most predominant defense in many addictions (Keltner, Schwecke, & Bostrom, 1995), treating it appropriately is important for continued success of the treatment.

While clinicians often lament that they see special needs of certain similar groups, (e.g., substance abuse diagnosis, males, African Americans) in the transition periods between care settings, there was little empirical data to support or refute their observations. With the findings from this study, attention can be given to make programs fit the needs of certain groups. As supported by Lehman, Postrado, Roth, McNary and Goldman (1994), "Because persons with CMI are highly diverse and because, inevitably, client subgroups vary in their exposure to aspects of the program, a study of its impact on treatment and outcome at the client level can be carried out more efficiently by

focusing on the targeted subgroups most likely to be affected by the program" (p.106).

However, attention to needs of similar groups has disadvantages if the needs of individuals are neglected. While knowing similarities guides important planning decisions, groups are primarily heterogeneous in the nature of service delivery. For example, while knowing the diagnosis may help plan some services, within each diagnostic category are individuals with individual differences, preferences and needs.

Comprehensive treatment programs for persons with the diagnosis of schizophrenia have been widely developed and evaluated (Santiago, McCall-Perez, & Bachrach, 1985; Bellack & Mueser, 1986), have addressed differences in rural and urban environments (Davies, Bromet, Schulz, Dunn, Morgenstern, 1989) and have addressed the complexity of community care through emphasis on housing and other supports (Danley & Anthony, 1987). Nonetheless, persons within this group may have other characteristics or environmental conditions that make the transition difficult and may require special assistance.

Theoretical Implications

The study supports the necessity of future work to differentiate distinct dimensions of continuity of care as an outcome indicator. This theoretical work requires both

content validation and further conceptual analysis. One theoretical implication that needs better definition relates to specific knowledge about rural settings and how continuity of care might be different than it is in urban settings. What can we learn from the rural settings that might make a difference?

One theory on the nature of rural organizations has been proposed by Melton (1983). Manning theory is a sociological concept that has been used to help explain the effects of size on social outcomes. Barker and Gump (1964) observed that school size affected student involvement. Specifically, they found a greater sense of participation experienced by small-school students compared to large-school students. Exploring psychological continuity of care more thoroughly, while drawing on concepts from the manning theory (Melton, 1983; Barker 1960) could provide important answers related to how higher continuity of care might be achieved in rural areas often cited for their lower budgets, less specialization, geographical barriers, higher client to staff ratio and other issues of access and utilization.

Continuity of care is an outcome with more than one dimension. Psychological continuity of care seems different from organizational continuity of care. Similarly, the concept of continuity of care seems to fit with the manning theory. Those persons discharged to small towns and smaller

CSBs might make more of an "event" of the process. Thus, hospitalization is more of an event as well. Smaller communities may be more likely to induce participation from their members, since there are many tasks to be performed by fewer people.

Manning theory has some important implications for understanding continuity of care. Bigger is not necessarily better and urban programs tend to lose people, despite the specialists specifically designed to link discharges from hospital to community.

Examination of the psychological aspects of continuity of care might help distinguish the concept from organizational continuity of care and thus provide a more discrete measure of continuity of care as an important client or community outcome. One way to decrease the skewness found in this measure and to increase the validity and reliability of the measure would be to increase the depth of the questions. The survey could ask, for example, if the same community staff had the contact with the patient while in and out of the hospital.

Suggestions for Future Research

The findings of this study provide a foundation for several areas of future study including methodologic, qualitative and quantitative inquiry. Results demonstrate that client and service characteristics influence continuity

of care. Future studies should utilize the expanded conceptual model to explore related variables. This could help determine the extent to which predisposing, enabling and need factors affect service utilization and subsequent client-centered outcomes such as quality of life (Lehman, Postrado, Roth, McNary, & Goldman, 1994; Tessler, Miller, Rossi, 1984), community tenure (Boydell, Malcolmson, Sikerbol, 1991) and client satisfaction (Grusky, Tierney, Manderscheid, & Grusky, 1985; Kalman, 1983).

Furthermore, it would be helpful to study the concept of ruralness. How CSBs are defined might correspond better to a continuum rather than a dichotomous measure. Future studies would benefit from a more rigorous delineation of how some CSBs are more rural than others.

This is a conceptual study which addresses only a portion of the full model. The Model of Continuity of Care Policy Development and Outcome (see Figure 3, page 51) outlines the fuller model from which this study begins. The full model would require data regarding community and program characteristics and additional outcome measures (e.g., community tenure, quality of life, client satisfaction).

Future research should examine specific groups, such as admissions who are voluntarily admitted to state facilities. What types of community programs are available which might

be more appropriate to the young adult with a first break in a chronic mental illness? How might these programs differ from those designed for persons with more disabling courses of illness?

A longitudinal study conducted over a period of time would contribute to the current findings. In this way it would be possible to examine both the length of time in the system as a predisposing factor and how it fits with the view of hospitalization as one part of the system and the length of time back in the community before discontinuation of services. Additionally, data on the type and amount of service use would provide new information and knowledge about how the programs fit the client's needs.

Finally, adding other methodologies might enhance the understanding of continuity of care. A future combination of various methodologies might provide a more comprehensive understanding of the concept from staff and consumer perspectives. For example, further research into continuity of care using staff and client perspectives will be necessary to fully understand this multi-dimensional concept.

A qualitative study exploring perceptions of the discharged client, the community staff and the hospital would illuminate more fully the variety of factors influencing continuity of care. The depth of such

interviews would enhance scale development in this area and a structured questionnaire could be developed.

In addition, the content of the interviews could be examined to determine congruence between their perceptions as well as congruence between subjective assessments and objective measures of need. Results are needed to guide and direct clinicians in their discharge planning activities. Perhaps other client and service characteristics would emerge as more valuable contributions to successful continuity of care and thus highlight characteristics of clients who might need more attention during the transition period between facility and community program.

Conclusion

This study explored elements of continuity of care from an administrative perspective based on conceptual frameworks that guide both community-based mental health care services delivery and health services research. The findings from this study provide basic information about the extent to which characteristics of clients and services are associated with achieving continuity of care.

This study looked at the individual's transition between hospital and community as a way to understand a portion of the delivery of mental health services, and specifically to compare rural and non-rural settings. The objective was to explore the factors that influence

continuity of care, a major goal of the mental health system. The results of this and related studies may be used to enhance continuity of care in rural and urban settings and strengthen system characteristics that have been determined to facilitate continuity of care. As noted by Olfson (1990), "[w]ithout substantial advances in the base of knowledge regarding the design and management of systems, the best value for the public resources being spent on the care of the mentally ill will not be achieved" (p. 7).

This study is unique in two aspects: 1) The focus of the study is broader than one single community model or specific program and 2) the assessment of continuity of care is conceptually grounded in theory and empirically tested as defined by a conceptual-theoretical-empirical (CTE) structure. In this way, the administrative elements of the concept were studied within a framework of a full conceptual model.

Research investigating the most efficacious ways of delivering services to persons with serious mental illness is a high priority because it is assumed that continuity of care leads to better individual client outcomes. Related research on client-specific outcomes (e.g., client satisfaction and quality of life) and community tenure will be enhanced with a better understanding of how CSBs provide continuity of the care they deliver.

The objective of this research is consistent with the funding priorities of the National Institute of Mental Health (NIMH). Service coordination and continuity are combined as one of the four priority research areas identified by the NIMH in the 1991 publication: Caring for People with Severe Mental Disorders: A National Plan of Research to Improve Services (DHHS). The National Plan gives high priority to the examination of the barriers to the use of appropriate services.

In addition to federal funding priorities, issues involved in this study have been recurrent themes of legislative action in Virginia (JLARC, 1979 and 1986).

This study contributes to the literature as an example of one state's experience in exploring some of the varied aspects of a multi-dimensional concept like continuity of care. As an adjunct to other concurrent studies of this same population, this study adds new knowledge about characteristics of clients or services that may affect continuity of care and discharge planning. Taken together, these studies can offer new information for overall program planning in efforts to enhance mechanisms that support continuity of care.

The continued expansion of community care for persons with serious mental illnesses places enormous pressures on community programs to be responsible and accountable, while

at the same time competing for limited service dollars. Client outcomes serve as one indication of how a state mental health policy is doing in this regard. Continuity of care is an outcome that is based on current state mental health policy and indicates the smooth flow of care between service settings. Understanding the client and service characteristics that influence the outcomes of care should help to reduce the number of discharged patients who become lost to the service system.

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Appendix A DFQ

FAC REGISTER # CSB

PERSON COMPLETING FORM	PLACE
	LABEL
	HERE
PHONE NUMBER	

Discharge Follow-Up Survey

1. Does your CSB have a record of this person related to the discharge listed above? (see instructions on back)
   ☐ YES (if "YES" continue with 2a) ☐ NO (if "NO" stop here!!)

2a. Did the facility notify your CSB of this person's discharge? (Notification could have been in writing or by documented face-to-face or telephone communication) ☐ YES ☐ NO

2b. If you answered "YES" to #2a above, on what date were you first notified? (Indicate the date letter was received or date of face-to-face/telephone contact; if date is not documented, leave blank)

Month ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
Day ☐ 1 ☐ 2 ☐ 3 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 0
Year ☐ 1991 ☐ 1992

3. Did someone from your CSB have face-to-face contact with this person after admission, but prior to his/her discharge from the facility? (If unknown, indicate "NO") ☐ YES ☐ NO

4a. Did your CSB have contact with this person after this discharge from the facility and before any subsequent hospitalizations? (Include both face-to-face and telephone contact) ☐ YES ☐ NO

4b. If you answered "YES" to #4a, on what date after discharge did this contact first occur?

Month ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
Day ☐ 1 ☐ 2 ☐ 3 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 0
Year ☐ 1991 ☐ 1992

5a. Did this person receive face-to-face services from your CSB after this discharge and before any subsequent hospitalization? ☐ YES (skip 5b, answer 6,7 & 8) ☐ NO (answer 5b, skip 6,7 & 8)

5b. If your answer to #5a is "NO," why not?
(Mark one answer, see instructions on back)
☐ Unable to locate/contact
☐ Seeking services from another, non-CSB source
☐ Refused services from all sources
☐ Rehospitalized prior to scheduled appointment
☐ Other: _____

6. On what date following discharge from the facility did the client begin receiving services from your CSB?
(Record the first date of face-to-face services following discharge.)

Month ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
Day ☐ 1 ☐ 2 ☐ 3 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 0
Year ☐ 1991 ☐ 1992

7. On what date was the last/most recent face-to-face contact with this client prior to October 1, 1992?

Month ☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec
Day ☐ 1 ☐ 2 ☐ 3 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 0
Year ☐ 1991 ☐ 1992

8. If the client's case was closed prior to October 1, 1992, or the last/most recent face-to-face service contact (as recorded in #7) was prior to July 1, 1992, why were services discontinued? (Mark one)
☐ Transferred to another organization
☐ Administratively discontinued (no contact for 90 days, non-compliance, not eligible for treatment)
☐ Client died
☐ Client terminated services against advice; no referral
☐ Client terminated services against advice; referral made
☐ Client lost to contact
☐ Discharged - treatment completed; no referral
☐ Discharged - treatment completed; additional services advised; no referral
☐ Discharged - treatment completed; additional services advised; referral made
☐ Other: _____

Vita